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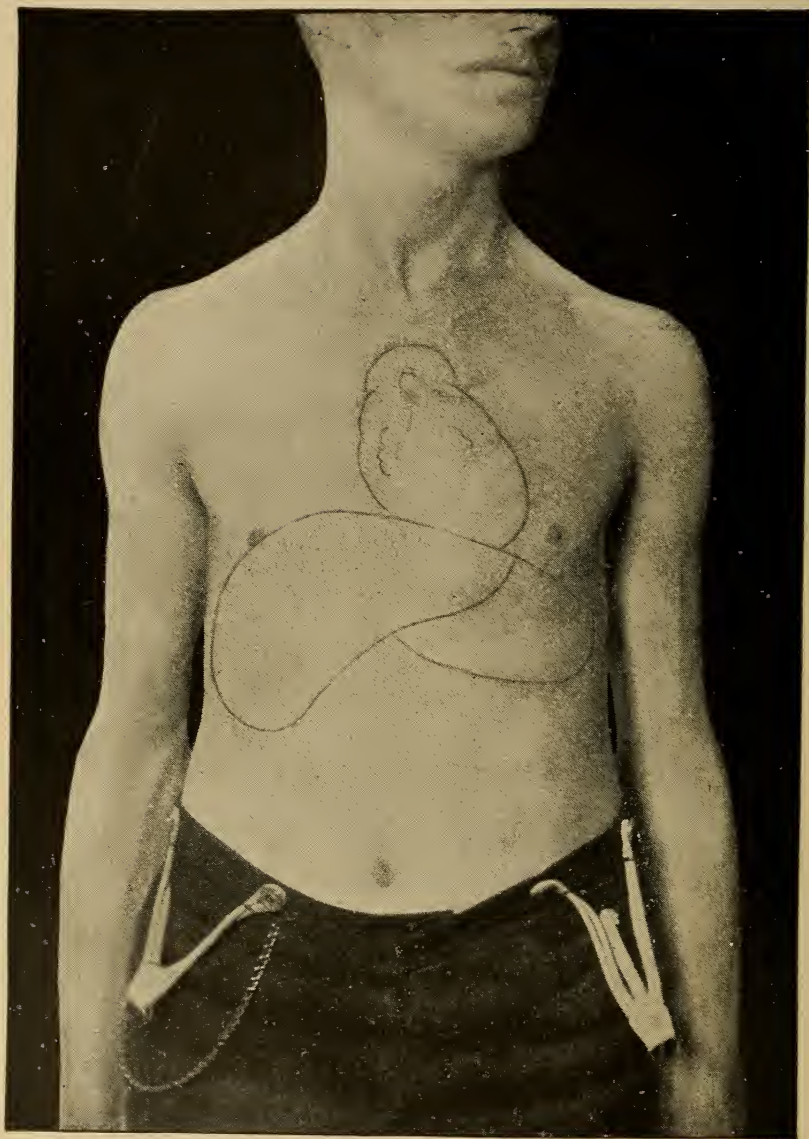
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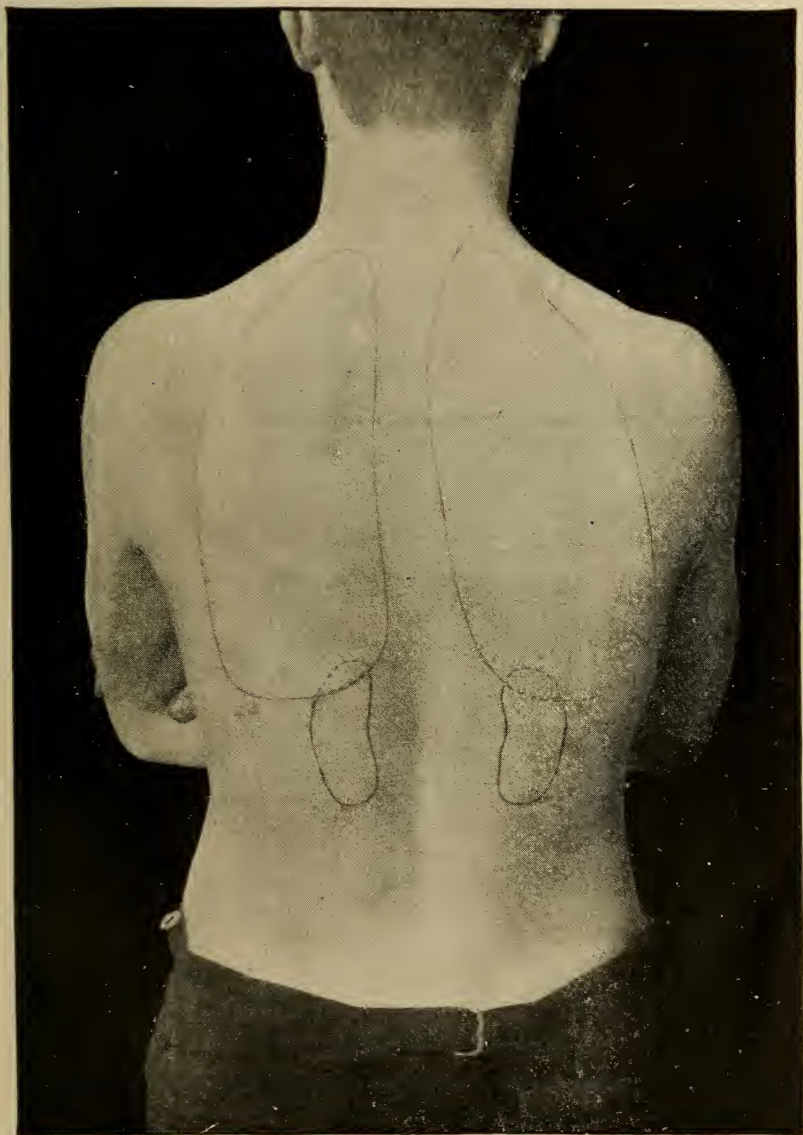


PLATE I.



Photographic view of the Chest, showing the outline of the Heart, Liver and Stomach on the living subject.

PLATE II.



Photographic view of the Back, showing the outline of the Lungs, Kidneys, and lower margin of the Liver on the living subject.

HOW TO EXAMINE

FOR

LIFE INSURANCE.

BY

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PRESIDENT OF THE ASSOCIATION OF LIFE INSURANCE MEDICAL
DIRECTORS, ETC.

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PREFACE.

The aim in writing this book has been to give to the Medical Examiner for Life Insurance a manual which is plain and practical, free from matters that are not of direct interest to him in the examination of an applicant for insurance, but at the same time sufficiently instructive to recall to his mind all the important points in relation to physical diagnosis that are likely to be of value to him. A physician who intends to examine for Life Insurance should especially prepare himself by a close study of such excellent works as Da Costa's "Medical Diagnosis," Finlayson's "Clinical Diagnosis" and Tyson's "Practical Examination of Urine." An Examiner's duties are simply to portray to the Home Office, in as clear and concise a manner as possible, the medical history, the actual condition of the applicant, and all that pertains to his health and its probable maintenance. The laws of average and the selection of lives are of little interest to him in the field; he needs to be reminded of the instructions from his Company, and how to accomplish his work in as thorough and expeditious a manner as possible.

There is nothing absolutely original in this work, as there is very little new to be said on the subject of physical diagnosis, but I have endeavored as far as possible to collect what is of value from the text-books, and also from the Life Insurance works that have recently appeared. I have had occasion to quote freely from the excellent little manual of "Essentials of Physical Diagnosis," by J. Wallace Anderson, and have found it advisable, owing to the concise manner in which matters are therein treated, to make little alteration in the language of the parts quoted. I am also indebted to Dr. Geo. McClellan for the diagram (Plate 3) which he drew from a special dissection made for this purpose, and also for his assistance in the preparation of the two photographic illustrations. I also desire to express my thanks to the Medical Directors of the Companies whose instructions appear in Part II. Not only were these gentlemen kind

enough to send them to me, but they also revised the proofs, so that these form the latest instructions that are issued by the Medical Departments of the Companies, and greatly enhance the value of the work.

Jesse J. Barker, Esq., Actuary, aided me in the preparation of the matter for Chapters I and II.

Dr. O. P. Rex read the proof of the section on Physical Diagnosis, and Prof. James Tyson kindly revised the chapter on the Examination of the Kidneys.

J. M. K.

128 So. 18th St., Philadelphia.

CONTENTS.

PART I.

CHAPTER I.

	PAGE
LIFE INSURANCE,	9

CHAPTER II.

MEDICAL EXAMINER,	10
Special Duties of an Examiner,	11

CHAPTER III.

THE EXAMINATION OF AN APPLICANT,	13
--	----

CHAPTER IV.

HABITS,	17
-------------------	----

CHAPTER V.

THE PULSE,	20
The Sphygmograph,	21

CHAPTER VI.

HEIGHT AND WEIGHT,	23
------------------------------	----

CHAPTER VII.

EXAMINATION OF THE HEART,	25
-------------------------------------	----

CHAPTER VIII.

EXAMINATION OF THE CHEST,	33
-------------------------------------	----

CHAPTER IX.

EXAMINATION OF THE LUNGS,	36
-------------------------------------	----

CHAPTER X.

INCIPIENT PHTHISIS,	43
-------------------------------	----

CHAPTER XI.

EXAMINATION OF THE ABDOMEN, LIVER AND BOWELS,	47
---	----

CHAPTER XII.

EXAMINATION OF THE KIDNEYS,	49
Specific Gravity,	50
Albumin,	51

	PAGE
Sugar,	52
Directions for the Use of the Saccharometer,	54
Urea,	55
Directions for the Use of the Ureometer,	56
Microscope,	58
Diseases of the Genito-Urinary Organs,	62
CHAPTER XIII.	
NERVOUS SYSTEM,	63
CHAPTER XIV.	
EXAMINATION OF WOMEN,	64
CHAPTER XV.	
SUMMARY,	65

PART II.

INSTRUCTIONS TO MEDICAL EXAMINERS AS ISSUED BY THE VARIOUS LIFE INSURANCE COMPANIES.

ÆTNA LIFE INSURANCE COMPANY,	69
BROOKLYN LIFE INSURANCE COMPANY,	73
CONNECTICUT GENERAL LIFE INSURANCE COMPANY,	81
CONNECTICUT MUTUAL LIFE INSURANCE COMPANY,	85
EQUITABLE LIFE ASSURANCE SOCIETY OF THE UNITED STATES,	87
HOME LIFE INSURANCE COMPANY,	97
JOHN HANCOCK MUTUAL LIFE INSURANCE COMPANY,	113
LIFE INSURANCE COMPANY OF VIRGINIA,	119
MARYLAND LIFE INSURANCE COMPANY,	123
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY,	125
MICHIGAN MUTUAL LIFE INSURANCE COMPANY,	131
MUTUAL BENEFIT LIFE INSURANCE COMPANY,	135
MUTUAL LIFE INSURANCE COMPANY OF NEW YORK,	139
NATIONAL LIFE INSURANCE COMPANY,	145
NEW ENGLAND MUTUAL LIFE INSURANCE COMPANY,	147
NEW YORK LIFE INSURANCE COMPANY,	151
NORTHWESTERN MASONIC AID ASSOCIATION,	165
NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY,	171
PENN MUTUAL LIFE INSURANCE COMPANY,	177
PHENIX MUTUAL LIFE INSURANCE COMPANY,	181
PROVIDENT SAVINGS LIFE ASSURANCE COMPANY,	185
UNION CENTRAL LIFE INSURANCE COMPANY,	189
UNION MUTUAL LIFE INSURANCE COMPANY OF MAINE,	193
WASHINGTON LIFE INSURANCE COMPANY,	205
SPECIMEN FORM OF AN APPLICATION AND A MEDICAL EXAMINATION BLANK,	209

PART I.

DETAILS OF THE EXAMINATION.

HOW TO EXAMINE FOR LIFE INSURANCE.

CHAPTER I.

LIFE INSURANCE.

Life Insurance is a contract of indemnity, a contract between a Life Insurance Company and the applicant for insurance, by which in consideration of the truth of the statements made in the application and those made to the Examiner, as to the present and previous health and habits of the party to be insured, and of the payment to the Company of the premiums required by the kind of policy desired, the Company agrees to pay at the death of the party insured, or at some other period, as in the case of an endowment policy, a certain amount of insurance.

The contract therefore is not valid and in fact never existed in case of fraud or concealment on the part of the applicant or person whose life is to be insured: and as this is so, and to avoid disputes, and misunderstandings, it is necessary that the Medical Examiner be careful to have not only all questions fully answered by the applicant, but all doubtful medical points cleared up, before the risk is accepted or the policy issued. Hence much depends upon the care and skill of the Medical Examiner and upon the thoroughness of his work.

“The general object or purpose of an Insurance Company is to afford indemnity or security against loss; its engagement is not founded on any philanthropic, benevolent or charitable principle; it is a purely business adventure in which one, for a stipulated consideration or premium per cent., engages to make up wholly or in part, or in a certain agreed amount, any specified loss which another may sustain. To grant indemnity or security against loss for a consideration is not only the design and purpose of an Insurance Company, but it is also the dominant and characteristic feature of the contract of insurance.”—*Decision of the Supreme Court of Pennsylvania.*

Therefore speculative insurance is contrary to law.

KINDS OF INSURANCE.

All the different kinds of insurance may be resolved into two main classes. Life and Endowment policies. Life policies are payable only at the death of the insured, and Endowment policies are payable at a fixed time, or at the prior death of the insured.

The premiums on these policies are payable by the insured, either continuously during the continuance of the insurance, called "Regular Payments," or may be payable for ten, fifteen or twenty years only, called "Limited Payments," and at the end of this time the policy becomes full paid. In the case of the limited payments the premiums to be paid yearly are necessarily the greater the shorter the period they are to continue.

What are called "Semi-Tontine," "Five Year Distribution," "Reversionary Additions," "Accumulated Surplus" policies, etc., are simply modifications of the two great plans, affecting merely the method of applying the dividends of surplus allowed by the Company, and have no bearing, medically or otherwise, on the grand divisions of insurance above referred to.

CHAPTER II.

MEDICAL EXAMINER.

The Medical Examiner sustains a peculiar relation while making the examination. He is the Agent of the applicant while recording the answers of the latter to the questions concerning his family and personal medical history; he should be extremely careful in writing his answers to avoid inaccuracy in his statement or uncertain expressions. He is also the confidential Medical Representative of the Company and is required to guard the interests of both: of the applicant in so far that trivial matters may not be exaggerated into unnecessary importance, and of the Company, that nothing needing investigation or consideration at the Home Office, may be overlooked. His judgment therefore must be nicely balanced and closely discriminating.

Unless the family history is very bad, the judgment of the Ex-

aminer should be made up mainly upon the personal condition of the applicant, as to whether or not he should be recommended for a policy. Then too there are cases where through some hereditary tendency the applicant may reasonably be considered to be a safe risk for 10, or 15, or perhaps 20 years, after which some hereditary taint in the family appears to develop, and terminate life. In these cases the risk might be accepted for an endowment policy running until the doubtful period is reached.

In other cases occupations seem to shorten life, as with glass blowers, stone cutters, axe grinders, polishers, etc. Here ten or fifteen years of such work usually develops consumption or some lung disease, and if these cases are accepted at all the insurance should terminate in ten or at the most fifteen years.

When an insured member dies, a Medical Examiner is frequently called on, as the attending physician, to fill out the physician's certificate on the Proofs of Loss. In such a case he should give all the information he can relating to the health of the applicant, both before and after the taking of the insurance, and especially all the particulars necessary to obtain a clear idea of the predisposing causes of the last illness, of its first appearance, and a concise history of its progress and end.

SPECIAL DUTIES OF AN EXAMINER.

The position of a Medical Examiner for a Life Insurance Company is one that carries with it a degree of responsibility and an amount of work which at times does not receive its equivalent, pecuniarily.

In some Agencies, owing, possibly, to the natural business tact of the Agent, or to the peculiar class of individuals that he insures—men doing a large business, and who are accustomed to appreciate the value of appointments and the economization of time—the Medical Examiner will find that his work does pay, and that, on the whole, it is an extremely agreeable position to hold; one in every way satisfactory, and of the greatest advantage to him; by bringing him in contact with business men, he is enabled to make their acquaintance under auspices which naturally make an impression upon them—a medical representative of an institution in which they have confidence to insure their lives.

The annoyances in an Examiner's life are at times extreme. He has been selected by the Company owing to his especial fitness;

he has the burden of their interests upon him, and they depend upon him for information of the most confidential character, which will enable them to make a proper decision in the case, and to issue a policy or not. Matters may have come before him which necessarily have unfavorably impressed him in regard to the insurability of the applicant. These may be simply matters of hearsay or general repute, but nevertheless they should form part of his report to the Company, if he is a conscientious man, and it is the duty of the Company to investigate such reports.

It does not take a very good guesser—and Life Insurance Agents are usually adepts in this line—to recognize at once that these statements have come through the Company's Examiner, and frequently an antagonistic feeling is established between the Agent and Examiner which the business relations of both to the Home Office naturally make stronger as time goes on. The Agent, however conscientious he may be, if he is working on commission, naturally feels that it is through the Examiner's report that his applicant has been refused insurance, and he feels that more careful consideration of the case, less conscientiousness on the part of the Examiner, and a more liberal spirit exhibited by the Medical Department at the Home Office, would have saved this risk for him.

There are undoubtedly questions that frequently arise in which the Company is given the benefit of the doubt, and rightly so, and these cases form the basis upon which differences of opinion between the Medical Examiner and the Agent exists.

Then, again, an Examiner for Life Insurance often feels that he has more than earned his compensation by the numberless unsatisfactory trips that he has taken to meet unkept appointments, the difficulty of securing a thorough and careful examination, such as he would like to report to his Company, the investigations which he has been obliged to make owing to false statements made by the applicant, or the omission of matters that are of vital importance in the decision at the Home Office, questions of personal history, of heredity, of occupation or habits, involving two or more visits, and probably taking up hours of valuable time.

The Medical Department of a Home Office recognizes all these facts, and studies both sides of the question, and from my personal knowledge of the action of all the largest Companies, through the personal acquaintance of the Medical Directors and their associates, I feel convinced that they endeavor, as far as they are able, to sup-

port their Medical Examiners, and give them credit for all the conscientious work that they do.

The Examiner in all cases should thoroughly acquaint himself with the particular rulings of the Company for which the examination is to be made. These instructions are at times difficult to remember, unless they have been carefully read and studied, and the differences peculiar to the various Companies have been noted.

One object of this manual is to have in a compact form the instructions that have been issued by the various Companies doing business in these United States, so that the Examiner can turn at once to the section which contains all the instructions issued by the Medical Department of each Company, and in this way fulfill these requirements.

CHAPTER III.

THE EXAMINATION OF AN APPLICANT.

When an applicant is presented to an Examiner, or an Examiner has been asked to visit one, to make an examination, it must be always borne in mind that, in a large majority of cases, the individual has not sought the insurance of his own free will, but has been convinced of the necessity of insuring his life, and the character of the policy which the Agent has shown him has struck his fancy, and he has decided to submit himself for examination. Naturally, if much time is lost before he is examined, he will cool off, or some other Agent, with more persuasive powers than the first, will convince him that his Company offers a contract which, in many respects, is more suited to him. It becomes, therefore, the duty of the Examiner, who has accepted the position from the Company, to at once attend to this matter of examination, to let no time elapse, but endeavor, as far as possible, to postpone for a short time other outstanding engagements that will enable him to attend to his duty with promptness and willingness. Such an Examiner is valuable to any Company, and his services will not only be appreciated, but he will retain the good-will of the Agent without sacrificing in any way

his reputation with the Company; and he will honestly discharge his duties, which demand that, in the short time that he is to be present with the applicant, he shall acquaint himself as thoroughly as possible with all that pertains to the individual.

He should under no circumstances be forced to make any sort of an examination with any one present, or in a place where he is constantly interrupted. It is well for the Examiner to at once state to the applicant that he would like to make this examination under the most favorable auspices, not only for the benefit of his Company, but also for the applicant himself, that he may state on his paper exactly his physical condition, and not be obliged to give the Company the benefit of doubts which arise from avoidable causes; and, possibly, the quieting influence which a little chat will have upon the applicant will tend to diminish a pulse-rate which would naturally be somewhat quickened by excitement or fear that something is going to be discovered about him which will tend to shorten his life and of which he does not know. Sitting together and chatting for a few moments, discussing the family record and the statements made in the application, an Examiner, if he is observant, will be able to note various points about the applicant which are extremely important. The first impression that one gets of an individual is certainly a very valuable one, and should not fail to be noted on the examination paper: Does he appear to be a man who would indicate resistance to fatigue? Does he look healthy, strong, etc.? There are some individuals who, upon most careful examination, show nothing whatever the matter with them, but yet there is a *something* about them that impresses one that they will not be long-lived. Is this the case with the applicant before you? Does he look as if he was a man whose occupation was more fatiguing than his degree of vitality would sustain? Does he look as if he was worrying about his business affairs? Does he look as if he took care of himself? Does he eat his meals quietly, and give his food time to digest?

It is this very impression, in one accustomed to making a number of examinations, that is as important as his power to detect disease; and frequently, upon the closest examination, an Examiner will not be able to detect disease in an individual, yet he is impressed with the fact that the applicant has not a healthy appearance. It is the detection of this want of power of resistance to disease on the part of the applicant that constitutes the best class of medical examiners.

Yet, on the other hand, one should be able to correctly describe the appearance of the applicant, and his reasons for his rejection of him, otherwise an Examiner might receive a false impression, and thus do an injustice to an applicant; a man who is exposed to the vicissitudes of climate may present an appearance which would certainly go against him should personal appearance alone constitute the cause of his rejection, whereas in fact, he may be a perfectly healthy man, and the Examiner should be able to discriminate between the rugged surface which has suffered on account of exposure or occupation, and that which is the result of poor vitality. Too rigid an examination is often brought up against an Examiner, and indeed we have found cases where the Examiner, impressed with the importance and necessity of a thorough picture of the case to the Home Office, has subjected the applicant to a too critical and annoying examination. An experienced Examiner should at once detect any evidence of disease on the part of the applicant, and if he finds a weak point, then it is his duty to follow it up as carefully as possible, but for an applicant, whose family record, occupation and previous history are good, to be subjected to a very rigid examination, is not to be expected. It is not at all necessary, in ordinary cases, that the applicant should be stripped to the skin; it simply suffices that care should be taken in auscultation and percussion, that no outside sound should reach the Examiner's ear, on account of starched shirt bosom or other clothing.

In answer to your questions in regard to his habits of life, do his answers convey the impression that he is sleepless, that he carries his business troubles home with him, that, in fact, the load which he is carrying is greater than he can bear? This is a very important matter, and one which affects a life risk possibly very much more than the few little lesions that may be discovered in the examination, and which of themselves may not be considered important; but far more important is the just appreciation of the strain, the wear and tear upon the system which the men of the present day are submitting themselves to. There are some who can stand it. They have received a momentum from a strong and healthy constitution which will carry them through life, notwithstanding the greatest possible strain, but by far the majority of the cases succumb to disease before their expectation of life, according to the insurance tables, would expire.

This quieting conversation, though it may be only for a few

moments, will enable the Examiner to correct statements which the applicant may have inadvertently made on the application, confirm the report generally, and enable him to state any important matters which would possibly require a special letter to the Home Office.

When considering the family record, and conversing thereupon with the applicant, all such statements that are found upon the application as causing the death of parents, brothers or sisters, such as "childbirth," "debility," "pneumonia," etc., should be inquired into, and the exact disease from which the relative died should be noted, and an investigation made as to whether there are any cases of "phthisis," "gout," "apoplexy," "rheumatism," "kidney disease," etc., in the family or its collateral branches. It is surprising how many papers come to the Home Office of a Company with the word "Childbirth" as the cause of death, especially when you take into consideration the really small percentage of deaths in childbirth that actually occur.

The various questions that appear upon the examination blank should then be answered. The answers to the questions should, as far as possible, be limited to "Yes" or "No;" it will be noted by a study of the blanks that the questions have been so arranged as to admit of a definite answer; though, if thought advisable, a more elaborate reply should be made to clear up any doubtful points. These questions having been explained to the applicant and answered with deliberation, the Examiner should now prepare to make the physical examination.

The examination should begin by a study of the applicant's appearance, the color of his eyes, his complexion; does his skin show a healthy hue, are his eyes bright, does his face exhibit the characteristics of health, not drawn or haggard by disease or lined with wrinkles, which denotes premature ageing; note the color of the hair; and it is well also to examine the tongue and see whether there is any evidence by it of disease or disorder of the digestive tract; an examination of the tongue should also include an examination of the throat, and if anything is discovered in the way of ulcers, patches, chronic pharyngitis, enlargement of the tonsils, or any indications which point to cancer or syphilis, it should be noted. Is the eye bright and clear, or are the pupils contracted or unequal, or have they the appearance of sleepiness or drowsiness, which would denote the abuse of narcotics; is the tongue thickly coated, the throat congested, the eyes somewhat bloodshot, which

would denote the excessive use of stimulants, and especially should this be noted if there is an odor to the breath; there is a peculiar odor which is often found in drinkers, which is difficult to describe, but which I have frequently noted to resemble the odor which arises from a damp cellar.

The applicant should be so placed in front of the Examiner that the light from the window should fall upon his face, and in that way the appearance of the skin can be noted; not only should this be examined for the evidences of eruption but also for the cachexia of the various diseases, yellowness or anæmic condition of the skin, puffiness about the eyes, pallor or blueness of the lips, prominent cheek-bones with the hectic of phthisis. These are all considered very important.

During the conversation, the Examiner can note the character of the applicant's voice, whether it is sonorous, sharp, high-pitched or husky, which are evidences of laryngeal phthisis; and the rapidity of the breath should be taken.

CHAPTER IV.

HABITS.

The question of the use of alcoholic stimulants has a very important bearing on life insurance examinations. Insurance companies should endeavor, as far as possible, to select their lives from the average class of human beings. This not only refers to age and occupation, but it also refers to individual habits, heredity and possibly even temperament. Statistics show that the mortality is less in England, among the moderate drinkers, than among the teetotalers, and this undoubtedly can be explained by the fact that moderate drinkers form the largest class of the population, and that possibly their moderation in this line is an index to their moderation in other things, and it brings them under the class of the least mortality. There is undoubtedly the greatest difficulty in judging of the exact amount of alcohol which an individual takes. There is no more difficult problem to solve in the whole of insur-

ance than to know what moderate drinking is. Shall we take his own opinion, or the opinion of the examiner, or the general reputation that the applicant has among his neighbors? Where the least suspicion exists as to the abuse of alcoholic liquors, the Examiner should first carefully investigate the effect they have had upon the system of the applicant. Do his functions normally perform their duties? Is his skin bright and clear, or mottled and congested? Are there any evidences of bilious derangement—coated tongue—nervous disturbance? These are most important. Then the question as to the amount that the applicant acknowledges indulging in and the character of his beverages should be considered. Does he drink between meals? Does he drink in the morning? An insurance company would always be safer to refuse a policy to one who acknowledges drinking before breakfast, as such an individual is certain to be classed among the intemperate.

“Intemperance is, perhaps, the most formidable enemy to the safe insurance of lives. It ranks before phthisis in its deadly effects on the human system. Not only is it often inherited, but organic ailments are by it originated and organic weakness crystallized into disease. The tendency to disease—as phthisis, gout, rheumatism and diabetes—are by it converted into actualities. Its slow, insidious effects upon organs in hardening their connective tissue, and thereby contracting as by a band on their blood vessels and choking off their supply of blood, are exemplified in cirrhosis of the liver, but act also on the lung and kidney. By promoting the fatty degeneration of muscular tissue in the heart and the whole system of arteries, and favoring sclerotic changes in their coats, the circulation from its centre to its ultimately terminating branches is affected, and either by failure of the heart itself, or by depriving the vessels of their elasticity and contractile power and favoring atheromatous changes in their coats, which lead to rupture and hemorrhages, it becomes a deadly agent. The vessels of the brain are sure to be involved and apoplexy rendered most likely. The degenerations of age are anticipated and precipitated by alcohol, and the dram drinker is thus sure to have a shortened life.

“The primary effects of alcohol on the nervous system—from nervous disorders, from various disorders of motion and sensation up to delirium tremens—are among the earliest but not the most fatal of its results; and the organic alterations which we have indicated are found rather in the dram drinker than in the drunkard.

It is the man who carries his drink well and is always under its influence who is in greatest danger. We must, therefore, decline to attach any value to the statements of an applicant or his friends that he 'Never was known to be drunk.' Small doses of stimulants taken repeatedly through the day and ended in a somewhat larger one at night, leave the system charged with alcohol, from which it is, in fact, never free, and the excretory organs are therefore continuously under its influence. These are the most dangerous cases, and therefore the Medical Examiner should not rest satisfied with the reply, 'I have never been drunk in my life.' The most searching inquiry should be made, with all the tact of the physician, as to the quantity taken each day and the frequency of the dose. We may forgive the rare outbreak of the youthful on certain festive occasions, if we are satisfied that the habit of drinking in the day hours has not been acquired, but we cannot pass the applicant whose daily habit is to take stimulants three or four times in the twelve hours. Drinking between meals should always be inquired about in cases in which we have any doubt about habits.

"The evidence of friends about temperance is often of the most unreliable nature. Each man has his own measure of what constitutes 'temperance' or what may be called excess.

"When evidence as to 'moderation' is required the replies are often most unsatisfactory, and have frequently to be wrung out of a 'friend' by repeated correspondence as to what the habits of an applicant really are. Medical officers are well aware that this is the most troublesome part of their duties, and that finally even the most elaborate correspondence will fail to clear up the point to the satisfaction of the Board or the Examiner. In such cases we are inclined to give the Company the benefit of the doubt.

"In studying the facts of intemperance, we may distinguish the following classes of victims:—

"The dram drinker, of whom we have already spoken.

"The occasional drunkard, who may get drunk at a fair or festivity several times a year, being temperate in the interval. This is very common in the country.

"The man who has violent outbreaks of intemperance at long intervals, which may last a week or a month, and then, under the influence of duties to be performed, or fear of dismissal from office, or other powerful cause endangering his position in life, subsides into temperance or total abstinence.

“For none of these can we find a place in Life Insurance. All of them are among the most dangerous risks which are offered to a Company; and no money consideration can be put against the chances of such a life breaking up suddenly.”*

The use of narcotic drugs comes also under consideration, and should be most carefully inquired into.

CHAPTER V.

THE PULSE.

It is well, after conversing with the applicant about his family record, etc., to at once take the pulse rate and rate of respiration. The importance of doing this before proceeding with the ordinary examination of the applicant is evident to all who examine for life insurance. The pulse would naturally be increased in force and frequency by any excitement, as well as by disease, and it is often impossible to make a correct interpretation of the cause of its frequency or to differentiate the rapid pulse of excitement from the rapid pulse of a diseased heart or incipient pulmonary disease. Should the Examiner find a pulse too rapid he should require the applicant to sit for a while, engage him in conversation, and after a short time note again the pulse rate and its rhythm and the character of the artery. It is always well to take the pulse rate for a full minute by the watch, and also to take the rate of both the right and left radials. The hands should rest at ease on a table, so as not to produce any excessive strain upon the artery; the attention of the applicant should be called to other matters while the pulse is being taken. The pulse, as a rule, is indicative of the condition of the heart, but at times, owing to the atheromatous condition of the vessels, the pulse wave may distinctly differ from the cardiac impulses. A slight intermittency may be noted in the pulse, which would escape one's attention upon the examination of the heart.

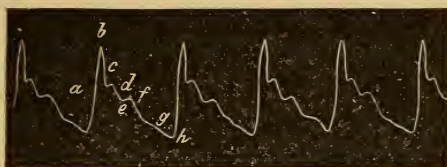
* Pollock and Chisholm's Medical Handbook of Life Assurance.

The finger should be gently placed upon the artery, the degree of resistance noted, the presence or absence of atheromatous patches or rings, and the pulse studied for its rapidity, intensity, regularity and intermittency. The normal pulse rate in the male varies from 70 to 72, in the female about 80. Atheroma, of course, should be looked for as age advances.

THE SPHYGMOGRAPH.

This is an instrument which registers the qualities of the pulse by means of tracings. It has by no means become universal in life insurance examinations, owing to the fact that the instruments are expensive and the tracings difficult to take. In doubtful cases, for large amounts of insurance, if the Examiner is thoroughly posted in the use of the sphygmograph, tracings made when the applicant

FIG. 1.



Sphygmogram of radial artery; pressure 23. Each part of the curve between the base of the up-stroke and the base of the next up-stroke corresponds to a beat of the heart. This figure shows five heart-beats and the part of a sixth. 1. Line of ascent, *a* to *b*. 2. The apex, *b*. 3. The line of descent, *b* to *h*.

is free from excitement and the pulse in its normal condition would add value to the record of the examination.

The sphygmograph is valuable not only in cases that are rendered doubtful by a suspicion of a disease of the artery, but also in the detection of affections of the heart, as it indicates the degree and tension by increased pressure in the arterial system caused by ventricular systole.

The pulse tracings consist of a series of curves, each of which corresponds with one beat of the heart.*

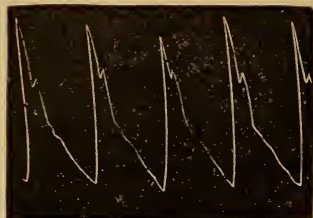
The line of ascent is nearly vertical and corresponds to the dilatation of the artery, produced by the systole of the left ventricle. In cases of aortic regurgitation it is quite vertical. *The apices of the normal pulse* are pointed.

The line of descent is gradual and corresponds to the contraction

* Landois' Physiology.

of the aorta. In this line will be noted two distinct elevations, the most marked *f*, the dicrotic wave, corresponds to the closure of the

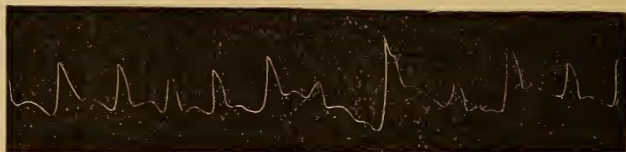
FIG. 2.



Aortic regurgitation.

aortic valves; the tidal wave, *d*, is the one preceding this, and is well marked in cirrhotic disease of the kidneys, accompanied by

FIG. 3.



Irregular pulse of mitral regurgitation.

hypertrophy of the left ventricle. The dicrotic wave is absent or slightly marked in cases of atheroma or any aortic regurgitation

FIG. 4.

Aortic stenosis, probably congenital. Male, 19 years. (*Jaccoud*.)

(Fig. 2). In mitral regurgitation the tidal or pre-dicrotic wave may be absent in some beats, but present in others, as seen in (Fig. 3).

FIG. 5.

Irregular pulse, with mitral stenosis. (*Schenle*.)

IRREGULARITY AND INTERMITTENCY.

Irregularity in the pulse differs from intermittency, and this should always be noted. By irregularity we mean inequality in the

pulse beat, both as regards force and as regards frequency. By intermittency we mean the actual dropping of a beat. It may be rhythmical, occurring so many to the minute, or may be irregular in frequency. In some persons regular intermittency has occurred from childhood, and is supposed by many to be in certain cases normal to the individual. But irregularity is usually an evidence of some cardiac disturbance, which requires either postponement of the applicant for future examination, or absolute rejection if it is found associated with evidences of heart disease.

CHAPTER VI.

HEIGHT AND WEIGHT.

It is a curious thing how few people know their own height, and, indeed, how few know their own weight; and as the question of height and weight, as far as their relation exists to one another, is an important matter in the decision of a case, and, also, as the height is frequently of very great importance when considering the death claim, if any mystery surround the case, the figures that an Examiner gives should be as correct as possible; every applicant's height should be measured, and this is a very easy thing to do by means of an ordinary tape measure, requesting the applicant to stand his heels firmly against a flat wall surface, and marking with a pencil his height, or the Examiner should have already in his office a scale, or a mark on some convenient wall, so that he can take these measurements in a few moments, and it is customary to consider the applicant's height with his shoes on.

The matter of weight becomes also at times of very great importance, especially when we consider the under-weights and over-weights. In order to avoid the expense of an unnecessary medical examination, many Companies furnish their Agents with a table of heights and weights, the understanding being that this table only shows the average at a certain age, and that a certain per cent. over that is allowable for over-weights, and under it for under-weights,

but we all know how impossible it is, in the selection of lives, to confine ourselves entirely to these table measurements; there are those who have a very thick-set, muscular form, in good proportion so far as the trunk goes, but with legs that are disproportionate; then, again, a man may have good chest measurements, and exceed in height, and be ranked as an under-weight, when in reality his looks do not class him as such.

The measurements of the chest and abdomen are very important indications of over- or under-weights; a man with a narrow chest is less desirable as an under-weight than a man whose chest is in proportion, just as one who has an abdominal circumference greater than his chest is a less desirable risk as an over-weight, than one who has a very heavy deposit of muscles on his trunk and arms. These points should always be noted on an examination blank. In cases of over-weight where the Examiner feels sure that the applicant is above the tables that are usually adopted by the Company for which he examines, he should make it a point to get the *accurate* weight by asking the applicant to step with him to the nearest drug or grocery store, or any place where there are scales, and thus save himself the trouble of doing this afterward, at a more inconvenient time, upon request from the Home Office.

PROPORTION BETWEEN HEIGHT AND WEIGHT OF HEALTHY MEN.

(Dr. Robertson's, Abridged.)

Height.	Weight.	Weight $-\frac{1}{5}$.	Weight $+\frac{1}{5}$.	Height.	Weight.	Weight $-\frac{1}{5}$.	Weight $+\frac{1}{5}$.
Ft. In.	lbs.	lbs.	lbs.	Ft. In.	lbs.	lbs.	lbs.
5 3	125	100	150	5 9	164	131	197
5 4	131	105	157	5 10	172	138	206
5 5	137	110	164	5 11	179	143	215
5 6	144	115	173	6 0	187	150	224
5 7	150	120	180	6 1	196	156	234
5 8	157	126	188	6 2	203	163	243

The weights given in the accompanying table were taken from the average of adults of middle life, *æt.* about 30, and the variation allowed (one-fifth, or 20 per cent.) would cover fairly the lighter weight of younger persons, down to *æt.* 20.

So long as the one-fifth — or + is not exceeded, the variation from the standard weight need not tell against the life; but if the weight is less than four-fifths of the average, or if it exceeds the average by more than one-fifth, then it may tell against eligibility of the life—each case being judged on its own merits. If in any

case the weight is too low, and the family history shows a tendency to consumption, such a life ought not to be accepted as a first-class risk, and the same applies to excessive weight where there is a quick pulse or a weak heart.

CHAPTER VII.

EXAMINATION OF THE HEART.

We have placed the examination of the heart before the general examination of the chest of the applicant, in order to be sure that we will obtain as clearly as possible an insight into its normal condition before the examination of the lungs, which would have a natural tendency to excite the circulation.

Many Life Insurance Examiners, in their haste, owing to lack of time, are more apt to make the physical examination of the lungs precede the minute examination of the heart, and thereby, by forcible expiration and inspiration, excite the applicant and increase the force of his circulation, and the result is, that when the ear of the Examiner is placed to the chest wall, the heart sounds are abnormally increased in intensity and the pulse is quickened. It would be impossible to directly pronounce the existence of a murmur, or to differentiate the normal exaggerated sounds from those that are produced by disease.

The methods used in the examination of the heart are: inspection, palpation, percussion and auscultation.

Position of the Heart in the Chest Wall.—The most certain, and, also, the most rapid method of counting the ribs and spaces, say on the left side, is to place the palm of the left hand on the sternum, and keeping the little finger in the first intercostal space, run the other fingers down the corresponding spaces till the thumb is placed on the fifth, in which we shall find the normal inferior limit of the heart itself.

The apex beat at once arrests our attention. From every standpoint it is the most conspicuous, the most significant, and, in the normal condition, the most constant feature of cardiac physiognomy.

It is the key to the position of the heart. It tells us most readily of the disturbing forces that are attacking the heart, either from within or from without, for while the base is the most fixed, the apex is the most free to move or to be moved in any direction.

Position of the Apex Beat.—Normally, it is situated in the fifth intercostal space, or just behind the upper border of the sixth rib on the left side. It should be a little further below the nipple than it is within the vertical nipple line, or about $1\frac{1}{2}$ inches below and $\frac{3}{4}$ of an inch to the right of the nipple, for it will be remembered *that the nipple does not occupy a fixed point*. The beat extends over an area of about an inch square, and it is formed, in the main, by a small portion of the left ventricle.

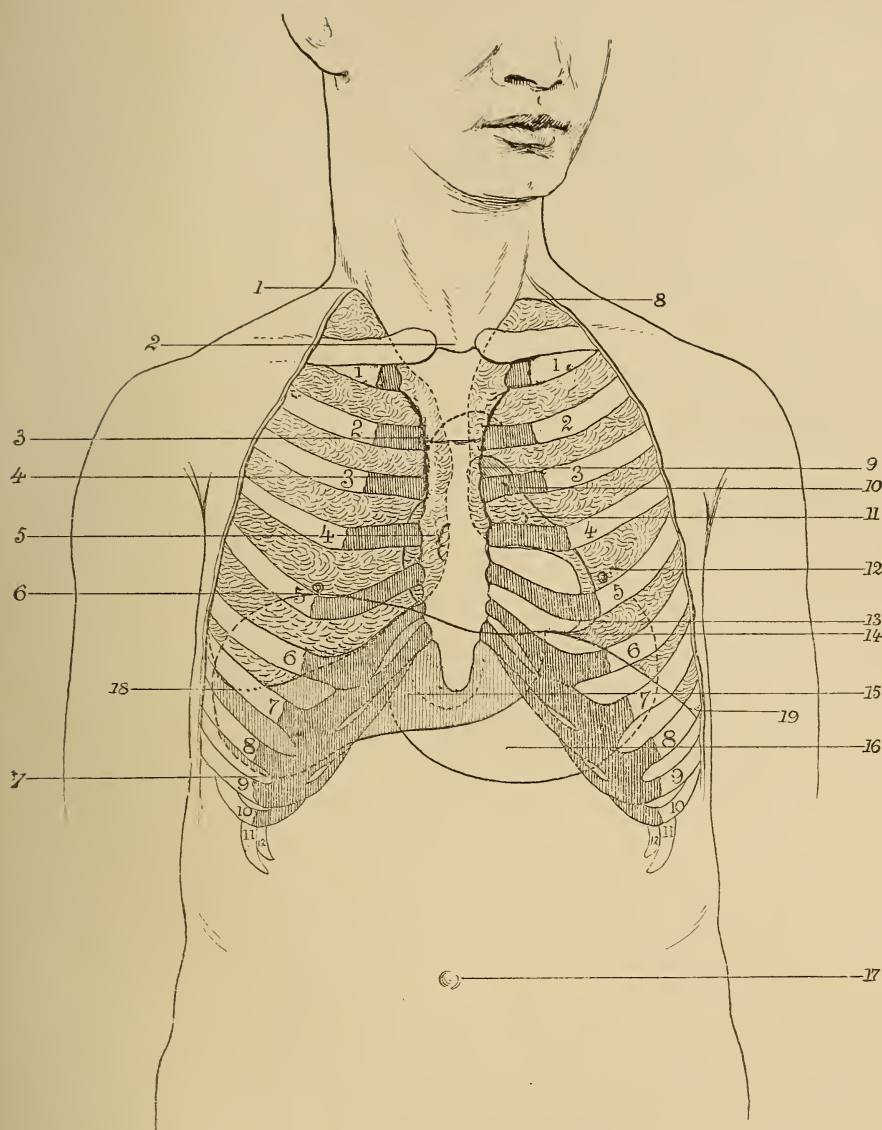
If the apex beat is rather diffused, then the point of pulsation furthest to the left is to be regarded as the apex. The person lying on the left side the apex is brought nearer the chest wall, and the impulse made more distinct; and it is at the same time carried a very little toward the left. We therefore move the applicant on to his left side if the beat is faint or imperceptible in the erect or dorsal positions, and if still in doubt, we endeavor to ascertain its position by auscultation. The apex beat terminates the long axis of the heart, the long axis itself being directed downward, slightly forward, and markedly to the left.

The Base of the Heart.—This measures about three inches, and is pretty equally divided by the middle line. Being at right angles to the long axis, it looks, not directly upward, but somewhat to the right, so that the left auricle is the higher of the two. It reaches almost to the lower edge of the second left costal cartilage.

The left border of the heart will be pretty accurately followed by drawing, from the left extremity of the base line, a line convex outward so as to almost touch the nipple, and then curving it slightly inward to the apex. (See Plate No. 3.) The right border cannot be so definitely sketched, as the heart rounds gradually backward, but the furthest point to the right is about midway between the mesial and right nipple lines, or an inch fully to the right of the sternum. The inferior border of the heart ascends with but a slight departure from the horizontal to join the right border. The above may be taken as the normal outline of the heart, always remembering that the apex beat is the only point that we are able actually, that is clinically, to fix.

Inspection.—We would refer the reader to the subject of the

PLATE III.



Topographical survey of Front of the Body of an Adult Male, showing Accurate Relations of the Viscera of the Thorax and Abdomen in proximity to the Diaphragm, in Tranquil Breathing.

- | | |
|--|--|
| 1. Apex of right lung. | 11. Left auricle Mitral valve. (Seat of mitral presystolic murmur.) |
| 2. Supra-sternal notch. | 12. Left nipple. |
| 3. Junction of second costal cartilage with sternum. (Seat of aortic murmurs.) | 13. Apex of heart. (Seat of mitral regurgitant murmur, transmitted from 11.) |
| 4. Seat of aortic valve. | 14. Line of diaphragm. |
| 5. Right auricle (tricuspid murmurs). | 15. Pylorus. |
| 6. Upper border of liver and line of diaphragm. | 16. Stomach. |
| 7. Lower border of liver. | 17. Umbilicus. |
| 8. Apex of left lung. | 18. Lower border of pulmonary resonance. |
| 9. Upper border of junction of third costal cartilage with sternum and pulmonary artery. | 19. " " of left lung. |
| 10. Valve of pulmonary artery. (Seat of murmur in pulmonary artery.) | |

general inspection of the chest, in Chapter VIII. In health, on inspection of the heart, we find that there is no præcordial bulging of the chest wall. In the dorsal decubitus, the impulse, if visible at all, is confined to the apex beat, unless the applicant be of spare build, when it may be seen, also, in the space above; there is, practically, never epigastric pulsation.

Deviations from this are, first: The bulging of the præcordial region by valvular disease, which has produced a change in the character of the chest wall.

Second. The area of impulse may be *increased* by increased action of the heart, due to physical or mental excitement. This can be readily ascertained as the cause by noting the normal position of the heart and its freedom from valvular disease, and by permitting the applicant to rest quietly for a time before a second examination is made. It must also be borne in mind that the abuse of tobacco or of stimulants is also an exciting cause.

Third. The area of impulse may be *increased* by hypertrophy or dilatation of the heart.

Fourth. The area of impulse is *diminished* by anything that will diminish the cardiac action, or by an emphysematous lung, overlapping of the heart, pleuritic effusions or by pericardial effusions.

Fifth. The area of impulse may be *displaced* by pleuritic effusions or pleuritic adhesions, by pneumothorax and aneurisms of the aorta and pericardial effusion.

Palpation.—In the examination of the heart, inspection and palpation go hand in hand. The one supplements, and it may be corrects, the other. We try again if the beat is sharp or prolonged, punctate or diffuse. But palpation does more; it tests the force of the impulse, and we also feel if there is anything like a thrill or vibration conveyed to the chest wall. This impulse marks the beginning of the ventricular systole, a fact that, as we shall see, may be of great value in verifying the rhythm of the cardiac murmur. The ventricular contraction is synchronous on both sides; it is a movement toward the chest wall, and also downward, with a slight wave from left to right.

In disease, the impulse force may be *increased* by anything that will increase the force of the heart's action, as hypertrophy alone or with slight dilatation.

Percussion.—The percussion of the heart is hardly of the same character as that of the lung. It is not so much to test the indi-

vidual part as to mark the outline of the whole, and this is not so easy. From all sides, the lung flows and ebbs on its surface with every act of inspiration, and while one form of pulmonary disease may leave the heart unduly exposed, another may completely cover it in. Nor does the heart present a flat surface for examination, but one which has a strong convex curve transversely as the heart rounds deeply within the chest. These conditions once more demand a constant study of the normal heart, to which the following directions can at best be only a guide. Two areas must be carefully distinguished—the exposed surface of the heart and the parts overlapped by the lung.

The Exposed Area of the Heart.—This consists practically of the right ventricle, the apex being the only part of the left ventricle that comes round to the front. It is somewhat triangular, and extends upward to the level of the upper margin of the fourth costal cartilage in the middle line; thence its right border falls perpendicularly—that is, down the middle line, while the left runs straight to the apex. The base coincides with the inferior border of the heart as far to the right as the middle line. This forms the area of superficial or absolute dullness. Obviously, it is affected by respiration; by forced inspiration the heart may be largely covered by the lung. (See Plate No. 3.) The area we have been assuming, and have just described, is that of moderate inspiration. Under ordinary circumstances the actual dullness hardly extends to the middle line, on account of the percussion vibrations of the sternum itself. This could be in part corrected by making the applicant incline inconveniently forward, thus bringing the heart in closer contact with the chest wall.

The Lung-covered Surface of the Heart.—This forms the area of deep or comparative dullness. Here there are insuperable difficulties in the way of accurate demarcation. The heart rapidly recedes on the right side under the sternum, which yields its own note of percussion. To the lower right there is hepatic dullness, with which that of the heart is continuous. Sometimes a distinction, sometimes an actual break, in the character of the dullness can be made out by experts, although the discrimination is possibly materially aided by knowing that a line drawn along the upper margin of hepatic dullness to the apex of the heart will traverse the cardiac boundary.

Area of Cardiac Dullness.—It is most important that this should be accurately determined, especially in cases where there is in-

creased heart action from nervousness, tobacco, alcoholic or coffee abuse, etc. Increased area of cardiac dullness may *seem* to exist from anything that will retract the lung, or from pericardial effusion. It may actually exist from hypertrophy and dilatation.

Auscultation.—The auscultation of the heart is a most important part of an examination for life insurance. So exact, so elaborate, so refined has it grown that the Examiner always approaches it with misgiving. Here, again, there is but one way—first, to study the normal state, then the grosser departures from health, and then the intricacies of finer and more subtle disorders. And so, beginning with the healthy phenomena, we consider first—

Cardiac Sounds.—Each beat of the heart, as we all know, is made up of two sounds followed by a pause; this complete revolution is usually termed the cardiac cycle. The two sounds are evidently not alike. The first is prolonged, with more volume, yet duller; the second is short and sharp. The word “lubb-tupp” is usually selected to imitate them. Wherever the sounds are heard, it will be noticed that as regards *quantity*, the first sound is always long and the second always short; but it is not so as regards *accent*. With a little care the accent can be made out to be on the first sound at the apex, while at the base it is on the second sound. The first sound is coincident with the beginning of the ventricular systole, the second sound with the beginning of the ventricular diastole, while during the pause, or perhaps only toward the end of the pause, the auricles are silently contracting.

The relative duration of the different periods within the cardiac cycle cannot be exactly estimated. In the case of the normally beating heart, the pause is longer than either the ventricular systole or diastole, but hardly as long as the two combined. The diastole is shorter than the systole. The auricular systole is generally believed to occupy a very short period immediately before the first sound. If the heart's action is quickened, it is chiefly the period of rest that is shortened. (*Anderson.*) As to the valvular elements in the sounds, it is generally agreed at what points the different parts of the sound produced at each orifice can be heard. But, again, the Examiner will remind himself of their anatomical situation. A line drawn from the upper border of the third left sterno-costal articulation to the fourth right intercostal space will cross the pulmonary aortic, mitral and tricuspid orifices in the order named; a superficial area of half an inch square and the

bell of a stethoscope will cover all four. (*Walshe*.) But it is not here that we listen to the sound of each orifice. Overlapped by lung and lying at various depths in the thorax, their sounds are conducted to very different points on the chest wall: *mitral sounds are sought for at the apex; those of the tricuspid valve at the lower end of the sternum; the aortic in the second right and the pulmonary in the second left intercostal space close to the sternum.* (See Plate No. 3.)

Alterations may take place in the heart sounds, first, by anything that weakens the heart's action. Second, on account of an intervening medium which lessens their conduction, as an excess of fat or muscle in the chest wall and pericardial effusion. Third, both sounds may be *increased* by nervous excitement, especially in young people. Fourth, by hypertrophy, though in the latter the first sound is usually said to have a muffled quality, but conveying the idea of increased volume, a short, sharp, clear first sound indicates dilatation. Fifth, alterations may take place in the heart sounds in character, as *reduplication*, by which is meant a doubling of one sound or both, and may be consistent with health, though, as it is usually the second sound which is doubled; it also occurs with mitral disease and with disease of the lung, and on that account it is difficult to absolutely disassociate its presence from that of disease, and it is considered to be sufficient cause for the rejection of the applicant. The doubling of the first sound is supposed usually to be found in connection with cardiac hypertrophy from cirrhosis of the kidney, though it is said that at times it is found independent of disease; nevertheless, the former being more frequent, it should be taken into consideration in Life Insurance examinations, and is sufficient cause for rejection. Sixth, the metallic quality of the sounds. This is usually produced by the presence of a neighboring cavity or by pneumothorax, though it may be produced by a distended stomach; careful examination of the lung will at once show whether pneumothorax is present, and, of course, if the metallic quality is produced by a distended stomach and no other evidence of cardiac disease, the fact should be noted on the papers.

Cardiac Murmurs.—A cardiac murmur is a sound which may be added to or may supplant the ordinary cardiac sound. There are various degrees of intensity, and their presence or absence is an important feature to be decided. They may be endocardial and pericardial. Endocardial murmurs are called organic murmurs if

they are produced by any organic or structural change in the heart or in its valves, or by anything that interferes with the passage of blood through the heart. Murmurs are usually studied according to their rhythm, by which we mean the relation of the murmur to one or the other of the heart sounds. They are also studied according to their locality, by which we mean their point of greatest intensity.

An Examiner for Life Insurance should first of all be able to detect the presence of a murmur, that is to say, he should be familiar enough with the heart sounds in health to note whether or not a murmur exists in the Applicant under examination. Having decided positively that a murmur does exist, his next step should be to ascertain its rhythm, whether it is *pre-systolic*, *systolic* or *diastolic*. Having decided on this point, he should now study the seat of the murmur, its transmission and conduction; whether it is heard over the aortic area, the pulmonary area, the tricuspid area (ensiform cartilage), the mitral area (the apex), and whether it is audible in the back.

Having definitely settled this matter in his mind, he should then study the character of the murmur, whether it is soft or blowing, harsh or rough. Taken into consideration with his study of the heart in relation to its size and the character of the circulation, the question comes up whether the murmur is *functional* (anæmic) or *organic*; though these points should be noted on the examination blank for the sake of thoroughness, their relation to the insurability of the applicant is a question that rests entirely with the Home Office; and though probably the question "Is longevity affected by functional disorders of the heart?" is one that will be settled at some future time, the general opinion at a majority of the Home Offices to-day is not to grant insurance without a very decided extra to any one who has any form of cardiac disease, whether functional or organic, if at all.

Pericardial Murmurs.—These are all evidences of disease, as the normal pericardium, like the pleura, is soft and smooth, and its two surfaces act upon one another perfectly noiselessly. Pericardial murmurs are heard usually over the body or exposed surface of the heart and are not transmitted. They are differentiated from pleural friction by their ceasing when the applicant holds his breath; but if pleurisy exists upon that surface of the pleura which is in contact with the pericardium, the friction may continue synchronous with the heart's action.

Murmurs are frequently heard, that are functional, over the arterial tracts, and these may be due, besides anæmia, to pressure from tumors or enlarged glands, or consolidated lung tissue, or the pressure of the stethoscope.

Venous pulsations are sometimes distinctly noted, and are usually the result of cardiac disease. Venous murmurs may be heard chiefly in the external jugular, and they are associated with anæmia. They are heard usually in women, more marked on the right side when the applicant is erect. Venous murmurs, being the evidences of anæmia, would disqualify one for life insurance for the time being.

A murmur heard at the base may accompany the first sound and may be either functional or organic. If *functional*, the murmur may have a feeble, soft quality, may be variable in intensity and may be heard more especially over the pulmonary area, but it may be heard over the aortic area and carried upwards to the vessels of the neck. Pulmonary systolic murmurs (heard close to the left of the sternum between the second and third ribs) are the most frequent of cardiac murmurs.

If *organic* it may be systolic, or diastolic and heard over the aortic area, and is dependent upon either aortic stenosis or regurgitation, or both.

A murmur, if heard at the apex, may be either pre-systolic or systolic; if the former it precedes and does not displace the first sound, is rough and purring, is not conducted, and is but rarely heard in the back; it is due to mitral stenosis.

If *systolic* it is usually carried toward the nipple line, is most intense at the apex, and is carried beyond it into the axillary region and even conducted to the back, and heard below the angle of the scapula, or upwards along the vertebral column; this is due to mitral regurgitation, owing to imperfect closure of the mitral valve from organic disease or functional disability.

The tricuspid murmur which is heard over the exposed portion of the right ventricle, is transmitted downwards, and is usually systolic, and due to tricuspid regurgitation.

Organic murmurs are usually accompanied by changes in the size of the heart, whereas functional or anæmic murmurs are associated with anæmia.

When murmurs are heard they should be definitely located by the Examiner, and he should state in his report whether there are associated with them any concomitant evidences of heart disease

or anæmia. The case will probably be either rejected or postponed by the Home Office.

There is one matter which is very important for the Examiner to remember, and that is that there are structural alterations in the heart, such as hypertrophy, with fatty degeneration, fatty infiltrations, tumors, and possibly diseases of enervation *that are fatal, but these may be unaccompanied by any murmur whatever*, though, of course, they are made evident by alterations in the sounds and other symptoms that denote heart disease.

Again, the presence of a murmur is *not always* indicative of disease of the heart, and an Applicant should not be at once rejected because the Examiner hears a heart murmur upon one examination; he should be postponed for a time, until satisfactory evidence of disease is found, as the case may be one of simple anæmia, loss of tone, or a purely functional disturbance. A functional murmur may disappear by a change of attitude of the individual, or an organic murmur be developed by exercise.

CHAPTER VIII.

EXAMINATION OF THE CHEST.

The obtaining of the chest measurements demands a degree of care that is rarely given to it. There is a certain knack in chest expansion which some people have, especially athletes; and it is impossible to get some men to expand their chest more than an inch, simply because they do not know how to do it, and not because they do not get sufficient air into their lungs. Again, some men will readily expand their chest three, four, or five inches; in fact I have seen them do it as much as six by straining themselves, throwing their chest forward and drawing in the belly; then, again, we frequently note in some cases of marked lung impairment the chest measurements will show a difference between expiration and inspiration of three inches, which is considered to be about the normal.

To take the chest measurements the applicant should remove the

coat and vest and the chest should be free from any restriction ; he should stand erect and the tape-measure should be placed over a spot corresponding to the third costo-sternal junction and directly over the prominent portion of the scapula behind ; the applicant should then stand with his heels together, his hands at his side, and be asked to take a long, deep breath with his mouth open, and at the same time drawing in the belly ; he should then allow all the air to go out of his chest—force it out, and after doing this two or three times the measurements can be taken.

The tape-measure should then be placed over the abdomen, on about a line with the umbilicus ; the applicant should fairly fill his lungs and the measurement of the abdomen should be taken.

Women should be as carefully and as thoroughly examined as men, and for this purpose the chest measurements should be taken over the loose clothing without corsets. It should be borne in mind that the tape measure should be placed at about the third costo-sternal junction, so as to avoid the prominence of the mammary glands, and that the measurements should be taken of the waist above the hips, on about a line with the umbilicus. The waist measurement is what is wanted, and not what is usually misnamed the abdominal girth.

Inspection.—In inspection we note the form and movements of the chest. The adult chest is elliptical in form ; it is not absolutely symmetrical, owing to the fact that the right side of the body is usually more used than the left. Upon inspiration, it tends to become circular. The Examiner standing before the applicant, he should note the size of the chest, and the number of respirations should be counted ; the average in the adult varies from 16 to 24 per minute, making a ratio with the pulse of four beats to each respiration. The upper portion of the chest should be well filled during each inspiratory movement, and the movements in a healthy individual should be free from force ; the inspiratory movement slightly more prolonged than the expiratory. All portions of the chest should expand symmetrically, as the opposite would denote pleuritic adhesion, or the presence of solidification, or fluid in the chest. Inspection is a very important matter in the examination of an applicant for insurance, as it at once gives the Examiner a correct idea of the performance of the vital functions of the heart and lungs, the location of the apex beat, the proper shape of the præcordial region, the usual attitude of the applicant, and the general

degree of vitality. The experienced Examiner can, from inspection alone, readily see if there is anything that needs further investigation.

Deformities of the Chest.—The deformities of the chest are of two kinds, bilateral and unilateral. The bilateral deformities are: the pigeon breast, the rickety chest, the chest transversely furrowed, the alar or pterygoid chest, and the emphysematous chest. The two latter are extremely important in Life Insurance examinations; the alar or pterygoid chest being recognized as the chest of phthisis, and the emphysematous chest an enlargement due to the emphysematous condition of the lung.

The unilateral deformities of the chest may be divided into two classes, enlargements and contractions; these are considered elsewhere. They should always be noted on the examination paper, for they become very important in regard to their effect on the probable future of the applicant.

Expansion of the Chest.—By a careful measurement with the tape-line, in strong men the circumference of the chest is $34\frac{3}{10}$ inches, in females 32 inches; the average expansion will increase it about $\frac{1}{10}$ or three inches. It certainly should not be less than this, unless there is something wrong with the respiration; but it may be found, should the expansion be less than the average, that the applicant does not know how to force the air out of his lungs.

Increased Respiration.—The rate of respiration may be increased by muscular exertion, by disease of the lung, by pleurisy, by fever, by heart disease, by tumors in the abdominal cavity, in fact, by anything that will cause an extra demand for air. In cases of anæmia, the applicant will be short breathed; and it frequently is an evidence of disease of the brain in its lower portion.

Diminished Respiration.—The respiratory rate may be diminished by mechanical obstructions, by injury to the brain. These will give rise to bilateral changes; but unilateral changes may be due to local causes, as phthisical apices, pleuritic effusions, pneumothorax, etc.

The respiratory rate may become irregular, through paralysis, disease of the brain or cord. If an abnormality exists in the respiratory movement, the applicant is for the time being uninsurable, unless it be due to a purely functional cause, when a postponement of the case will be necessary.

CHAPTER IX.

EXAMINATION OF THE LUNGS.

In the examination of the lungs we use precisely the same methods as we do in the examination of the heart—inspection, palpation, percussion and auscultation.

Inspection.—We would refer the reader to Chapter VIII, on the inspection of the chest.

Palpation.—By palpation we mean the applying of the palmar surface of the finger or of the hand to the chest wall for a study of the vibrations of the viscera beneath and the detection of any abnormality therein existing.

The sensation transmitted to the finger will denote the character of the tissue through which the vibration passes, and by it will be noted the normal respiratory fremitus, the vocal fremitus, the normal cardiac impulse and thrill; or the abnormal fremitus which is produced by consolidation of pulmonary tissue, its absence in effusions, and the thrill of aneurisms.

By vocal fremitus we mean the voice vibration. This is estimated by placing the hand upon different portions of the chest; but it must be borne in mind that there are many conditions consistent with health that give rise to difference in vibrations in different individuals, thus the amount of muscle or fat over the surface, the character of the voice itself; and it must also be borne in mind that it is somewhat more marked on the right side than on the left, owing to the fact that the right side is usually more fully developed, and that the heart occupies a large space on the left.

In testing the vocal fremitus, the applicant should be made to repeat slowly and distinctly certain sounds, and careful attention should be paid to them, thus the numbers “twenty-three,” “twenty-four,” or “ninety-eight,” “ninety-nine,” preferably the latter, are those used.

Increased vocal fremitus, when found associated with other physical signs of consolidated tissue, is a very important factor in life insurance examinations.

Diminished vocal fremitus, when found associated with other signs of fluid or cavities filled with air, is important confirmatory evidence.

Pleural fremitus is the grating which is transmitted to the hand from roughened pleura; this should always be sought for.

Bronchial fremitus shows the presence of mucus in the bronchial tubes, and is also important when associated with râles heard upon auscultation.

PERCUSSION.

It is not necessary in a book of this kind to consider the subject of percussion in the same light as we would if writing a book on physical diagnosis. A physician who accepts the position of Examiner for an insurance company is supposed to be sufficiently educated to know what percussion is, and what is its object; but, by all means, he should have availed himself of opportunities to have studied percussion on the normal individual, as it is the recognition of normal sounds that is necessary for him now. In my experience in teaching physical diagnosis, not sufficient stress has been laid upon this, and students are taught the deviations that exist without ever having their ears tuned to the natural sounds and the normal differences. To say that a percussion note is normal and another is not is often an extremely difficult matter; so much depends on the individual, the depth of the chest, the amount of air in the lungs, the character of the breathing, etc. What we wish to determine by percussion is to note from the character of the sounds exactly the condition of the tissue beneath. When we percuss over that portion of the chest in which there should be nothing but lung tissue filled with air, we want to be able to note the differences that would arise should this air be contained in a cavity or in numerous air cells, or should solidification of tissue be found there. Upon percussing a solid organ, as the liver, we get an entirely different note, and the ear should be accustomed to the differences between the percussion note of a solid body, of a cavity containing fluid, air in numerous cells, air in one cavity communicating with others, or air contained in a cavity having one communication, as the stomach.

The applicant should stand erect, hands by the sides, and both sides of the chest, as nearly as possible, placed under the same conditions. The Examiner, standing in front, should place the first two fingers of the left hand upon the chest on one side and gently tap with the fleshy part of the two fingers of the right hand. There should be freedom in the use of the fingers. The Examiner should percuss from the wrist, or if a deep stroke is necessary he should

make slight use of the forearm ; he should strike with the point of the fingers, as perpendicularly as possible, and the percussing finger should be allowed to gently rebound from the finger struck. It is not necessary that any force should be used in percussing, as the slightest tapping which will convey the sound to the practiced ear will be sufficient, unless it is intended to bring out the sounds of tissue far away from the chest wall, when more forcible percussion will be necessary.

The old saying, "that dirt is nothing but misplaced matter," is exemplified in percussion notes, as percussion sounds are only abnormal when they are found where they should not exist ; thus, a dull percussion note would be abnormal at the apex of the lung but normal over the body of the heart, a tympanitic note would be abnormal over the lung but normal over the stomach. In this way great care should be taken by the Examiner that he recognizes what sort of tissue should exist beneath his finger before he elicits the percussion note.

Let us, for a moment describe what should be found upon percussing the normal chest. It will be observed that apart altogether from the præcordial region the percussion note is not the same at all parts. Let the clavicle itself be percussed, and it will be found that the outer half is duller than the inner, while, again, it becomes less resonant at the sternal articulation. Over the infra-clavicular region there is less resonance and more resistance toward the sternum, till we find we are catching the dullness of the great vessels of the mediastinum. Such details, however, should not be committed to memory from books ; they are to be sought out by each one for himself, bearing in mind that differences, occurring even over the same parts in different healthy individuals, demand not an absolute but a comparative standard.

But the general features of the different regions should have some attention from the first. The right mammary region, with its commencing liver dullness, and the right infra-mammary, where that dullness is more marked ; the cardiac dullness of the left mammary region, and the stomach tympanitic note of the left infra-mammary, should all be examined. The Examiner should be prepared to find the percussion of the upper part of the posterior surface of the chest comparatively unsatisfactory, at least over the scapulæ. It is difficult or impossible to make out finer distinctions over them, where the percussion stroke itself requires to be so much

stronger to penetrate the greatly-thickened parietes at that part, though it is most important to percuss carefully the supra-scapular region.

Deviations from the normal sound would constitute disease, and of course these deviations may be of various kinds, dependent upon the condition of the portion affected; thus we may have, first, *absolute dullness*, the result of fluid, tumors or aneurisms; second, slight *dullness*, from incipient phthisis, plastic pleurisy or enlarged glands; third, *increased resonance*, from emaciation of the chest wall, emphysema, pneumothorax, or by contrast with the other side; fourth, *tympanitic note*, heard over a small cavity surrounded by solidification, or from the solidification overlying enlarged bronchial tubes; fifth, *cracked-pot sound*, which indicates a cavity near the surface; sixth, *amphoric resonance*, which is produced by a large cavity near the surface; seventh, *the sense of resistance*, the feeling of solidity upon percussing, which the experienced Examiner will note apart from the percussion sounds.

Auscultation.—The applicant should be in the same position as is required for percussion. If immediate auscultation is used and the auscultator's ear is directly applied to the chest, there should be little, if any intervening substance that would give rise to sounds that might confuse him. The Examiner may either apply his ear directly to the chest or use a stethoscope. My advice certainly would be that he would accustom himself to the sounds by both methods. At times he will need the stethoscope in a particular area where he suspects local disease, but if he accustom himself to the use of the stethoscope altogether, and, for some reason or another, forgets to take it with him, he will find himself in a rather embarrassing predicament.

Placing the ear upon the chest wall, it is necessary for the Examiner to take into consideration various conditions—first of all, the character of the respiration, whether it is soft or noisy; secondly, the differences between inspiration and expiration; thirdly, the presence of abnormal sounds during these acts. The applicant should be asked to breathe through his mouth and thereby the sounds made in the nose will not be transmitted to the lung. The respiratory sound will vary in different portions of the chest; in certain parts, especially the apices, it will be soft, the respiration freer, and inspiration and expiration scarcely audible; abnormal changes would be blowing inspiration and prolonged expiration;

over the bronchial tubes it assumes more of a bronchial character, expiration is more prolonged and often exceeding that of the inspiratory sound. There is a *slight* difference between the right and left infra-clavicular regions, the right being more prolonged in expiration and somewhat higher pitch than the left.

Normal sounds become abnormal when heard elsewhere than where they belong. The bronchial breathing, which is heard over the larynx or trachea, is normal, but becomes abnormal when heard in any other portion of the chest.

Of course the character of the breathing depends greatly upon the amount of air which enters the chest. Some individuals who have feeble chest development, and who live sedentary lives, not given to athletic exercise, have much feebler respiratory sounds than those who have developed their lungs, and yet at the same time they may not be affected with disease.

In using the stethoscope the following precautions should be taken: The Examiner should not press heavily with the stethoscope, and he should always be careful to adapt the bell of the stethoscope to the chest; he should place his ear to the ear-piece without moving the stethoscope in the least from its position; for there is not a sound but what would be thereby modified; should it accidentally occur, the vibration of the air itself in the stethoscope ought to be at once recognized by the practiced ear, warning him that some inequality of the chest surface, we shall suppose, is displacing the bell of the stethoscope.

The auscultator should never put himself into an awkward position by bending too far over the applicant, for he might in this way fail to hear an otherwise audible sound. Obviously, too, nothing should touch the stethoscope or rub against the applicant's chest, or otherwise the most startling friction sounds may be heard. Hair on the chest, a starched shirt bosom, or even a silk undershirt may produce fine crackling sounds from contact with the stethoscope. The simplest and most effectual plan to obviate the first of these is to lay on the skin a small piece of wet blotting paper, sufficiently large for the bell of the stethoscope.

The respiratory murmur varies considerably within the normal limits; emaciation of the chest wall will intensify the sound; unequal muscular development will also affect it.

In disease, we notice alterations in the respiratory murmur—1st, in degree. It may be *diminished* by anything that will diminish

the amount of air entering the lungs. We find this to be the case in asthma and bronchitis, the pressure of or the mere presence of aneurisms or other tumors, also in emphysema, in collapse of the lung, or when there is any solidification. 2d. The respiratory murmur may be *entirely suppressed* by interference with the entrance of the air, or by something which affects the transmission of the sound to the ear, such as effusion. 3d. The respiratory murmur may be *increased*, owing to a larger amount of air going into the air vesicles from over-exertion of the lung, due to obstruction in other parts; in other words, what is known as supplementary respiration. 4th. The respiration may be *jerky*, which is an abnormality in character; this is by some supposed to be indicative of incipient phthisis when heard at the apex, and considered one of the first evidences of this disease, though by others less stress is laid upon it, as they consider it to be of nervous origin. 5th. The expiratory sound may be *prolonged*; this is an evidence of early tubercular infiltration, and is also found in emphysema. 6th. The respiration may be *harsh*; this is found in tubercular infiltration. 7th. The respiration may be *bronchial*; this refers to expiration as well as inspiration. Of course, when found over the large bronchial tubes, this would be normal, but when heard elsewhere, it is an evidence of disease; it is found particularly in consolidation. 8th. Respiration may be *cavernous*, that is, hollow; this is produced by a cavity of considerable size near the lung surface, or with surrounding condensation, containing little or no fluid, and communicating with one or more bronchi; or it may be produced by an enlarged bronchus. 9th. Respiration may be *amphoric*, which is a very hollow sound, and can be produced by a large cavity containing air, or in pneumothorax. It is like the sound produced by blowing over the mouth of a jar.

Râles.—When the bronchial tubes contain material which is abnormal to them, the air passing through them produces certain sounds which are called râles; these may or may not be important, but should always be noted. These may be *dry* or *moist*; when dry they are called *sibilant* or *sonorous*, and are then associated with bronchitis, bronchial catarrh, or asthma, and may be caused by swollen mucous membrane, the presence of mucus or pus, or a spasmodically constricted bronchus, or a foreign body in the bronchial tubes. The moist râles may be considered to be of three kinds—*crepitant*, *subcrepitant*, and *coarse* or *gurgling* râles.

Crepitant râles are heard only in inspiration, and sound like the rustling of silk; it is typical of the first stage of lobar-pneumonia, and when heard at the apex it is a strong point in favor of the early stages of pulmonary phthisis.

The sub-crepitant râles are the same as the crepitant, only they are heard in expiration as well as inspiration; they are found in bronchitis, and also in the earlier stages of pneumonia, and when heard at the apex are also a serious matter; if heard at the base, they are an evidence of dry pleurisy, and when heard throughout both lungs they denote bronchitis. The clicking râle which is often heard at the apex is a common sign of the bronchial catarrh attending tubercle, in fact, *all fine moist râles about the apex should be carefully noted.*

Gurgling râles are heard only over cavities or large bronchial tubes.

It is safe to say that when râles are heard, the applicant is not a fit subject for Life Insurance; but if he is robust in appearance and has no other evidence whatever of pulmonary trouble, they may simply denote bronchitis, and the case should be postponed for a few days and then reëxamined; but if there is any tendency to phthisis in the family of the applicant, and he is anæmic and has any evidences of phthisical diathesis, the case should certainly not be recommended to the Home Office.

The word râle has also been applied to a pleural friction sound. In health, the pleuræ should move silently upon each other, with a free movement, but the slightest roughening of either surface will give on inspiration or expiration, or both, a sound in proportion to the amount of pleural tissue affected. This sound comes very much sooner to the ear than the ordinary intra-vesicular râle, and the very fact that it is superficial, limited in area, possibly influenced by pressure, but not by coughing, are sufficient evidences of their situation; of course, the presence of this sound would require the postponement of the applicant.

Vocal Resonance.—Vocal resonance is an important feature in the detection of pulmonary disease. By it we mean the transmission of the voice and its appreciation by the ear. It is influenced by sex, being louder in the male; the more capacious the chest, the thinner the chest wall, and the deeper the tone of voice, the louder the vocal resonance. Vocal resonance should be tested by making the applicant pronounce the words "one," "two," "three," or "ninety-

eight," "ninety-nine," slowly and distinctly, while the ear of the Examiner is upon the chest.

The vocal resonance may be *increased* by consolidation of the lung of any sort, without occlusion of the larger bronchial tubes.

The vocal resonance may be *diminished* by fluid in the chest wall, by occlusion of the main bronchus from tumors or aneurisms, by obstruction of the bronchial tubes by means of secretion, or by pneumothorax.

The vocal resonance may be *altered* in quality by anything that will change the character of the transmitting medium; thus, a thin layer of pleuritic effusion will produce a sound known as ægophony.

CHAPTER X.

INCIPIENT PHTHISIS.

In thus rapidly passing over the examination of the lungs, we have endeavored, as far as possible, to avoid anything doubtful, and have insisted upon the Examiner placing upon the examination blank clearly the conditions that his methods have enabled him to observe, and by taking his examination in its entirety, the Home Office can be the judge of the value of the points from it; and if further investigation is needed, the lines of this investigation can be indicated by special correspondence.

It is well here to dwell for a moment upon the importance of the detection of the very earliest symptoms of pulmonary disease. It must be borne in mind that an individual is very much more disposed to insure, who believes that he is not up to the standard. It has been said that if we could get the conscientious opinion of an individual as regards his own state of feeling, we would often arrive at far greater perfection in the selection of risks. The man who knows that he is not up to par, feels the necessity of insurance, but the phthisical man, and a strange freak it is in this disease, imagines himself improving in health until the day of his death. He will not acknowledge that there is anything the matter with his lungs, and with perfect good faith he will conceal the occasional

slight hæmorrhages which are so pathognomonic; he will conceal the hectic, and not mention the emaciation and slight morning cough or expectoration and the shortness of breath, and in doing so, he by no means does it with the intention to defraud the Company, but simply because it is a part of his disease to imagine his symptoms to be trivial, and his condition to be that of good health.

An Examiner should always be on his guard for this very thing, as it is an extremely difficult matter, and one of very great importance, for the evidence of incipient phthisis to be noted in its very earliest stages.

Dr. Harris* calls especial attention to the importance of hæmoptysis amongst the earliest symptoms, especially the repeated slight hæmorrhages; he lays stress, also, upon the family history, notwithstanding the attention paid at the present day to the subject of the tubercular bacillus; for clinical evidences that phthisis is transmitted is undoubted. Among the earliest positive physical signs may be noted the impaired movement of one or both apices. These may be noted by the Examiner standing behind the applicant, placing his hands upon the subclavicular region of each side and noticing whether both sides rise equally and readily during inspiration.

Dr. Harris also gives another sign which deserves attention; this is the lower limit of pulmonary resonance in the supra-clavicular and supra-scapular regions, on the affected as compared with the sound side. This may be detected in cases where no dullness is present. Any dullness, or tonelessness on percussion at one apex must in a doubtful case be regarded as of great significance. The auscultatory signs are frequently absent, but this can be explained by the fact that in such cases the process is deep-seated in the lung, and that the sounds produced by the consolidation are masked by the normal vesicular murmur.

In the early stage the vesicular murmur may be feeble, it may be somewhat harsh or bronchial in quality, or the expiration may be prolonged, but it should be noted that this difference should exist on one side only or to a more marked degree.

The râles which are usually present in early phthisis may vary from day to day owing to the changes in degree of the bronchial catarrh present in the neighborhood of the tubercular deposit.

* *London Lancet*, December 21st, 1889.

The presence of dry crepitations, which usually disappear on taking deep breath, and are accentuated by coughing, and frequently heard alone in the supra-clavicular and supra-scapular regions, are of great value in early phthisis.

Then again in other cases pleuritic friction may be an early sign, especially if apical.

The clinical thermometer should be used by the Examiner in all doubtful cases. It is especially important in the detection of incipient phthisis, and if the applicant exhibits any of the symptoms just enumerated, the Examiner would fail in his duty did he not apply this test. But he should proceed still further, and make a microscopical examination of the sputum for the tubercular

FIG. 6.



Tubercle-bacilli in sputum (Shakespeare). $\times 600$.

bacillus (see Fig. 6) and for the elastic fibres of lung tissue. Dr. J. P. Crozer Griffith suggests the following methods as the most readily adapted for this purpose:—

The applicant should be asked to preserve some of the sputum as clean from food or other matters as possible. When there is but little expectoration it is well to have some of that raised in the morning saved, as there is often more at that time. This should be placed in a bottle and given to the Examiner. It is as well to impress the applicant with the fact that but a very small quantity is necessary. The sputum should now be poured out on a piece of glass—window-glass will do—preferably over a black surface. A *very* minute portion of the greenish part—if there is any such—is now picked out with a clean, mounted needle, and pressed between

two cover-glasses. These are now *slid* apart—not lifted up. They are then passed quickly through the flame of a Bunsen burner or alcohol lamp, with the sputum side up. Do this two or three times, till the sputum is dry. Be careful not to burn. Now they are ready for staining. The Ehrlich's Gentian-violet-anilin-water may be used, as it is sure, if it is slow.

Into a test-tube, half full of water, pour a few drops of anilin. With the thumb over the end, now shake this well for some minutes, then filter. This makes the anilin water; the water having taken up a certain amount of the anilin. A bottle may be kept of saturated alcoholic solution of Gentian violet. To the anilin water in the tube add a few drops of the violet solution, until the water is just becoming opaque. Very few drops will do this, and it is easy to tell when there is enough. Filter some of this into a watch-glass and in it place the prepared cover-glasses, float them on it face down, if possible, though it does not make much difference. Let them remain here, covered up, for twenty-four hours. To continue the process, take the cover-glasses from the dye, dip them for a second or so in a solution of three parts nitric acid in one-hundred parts alcohol. Indeed, it is often well to dilute this still more, in order to make it more manageable. They are now washed quickly in two or three washings of alcohol until the blue color has just about disappeared. They are now dried without heat and examined in oil of cloves. It is, however, difficult to work without a background to the bacilli, so it is usual to make a double stain, as follows: Put a little powdered vesuvin, or Bismarck brown, into a test-tube with water, shake and filter; the color should not be too deep. Having removed the cover-glass from the alcohol dip it in water, and then immerse it in the brown dye for seconds or minutes, depending on the strength of the dye. It is only necessary to get a very faint brown stain, just enough to stain the cells of the sputum so as to focus easily in looking for the blue bacilli, if they are but few in number. The cover-glass is now washed in water and dried without heat, as before, and examined in oil of cloves, or balsam. The solution should always be made fresh. It is not much trouble.

Another much shorter method is that of Ziel, with carbol-fuchsin and heat. The solution is prepared by adding 10 c. c. of a saturated solution of fuchsin to 90 c. c. of a five per cent. aqueous solution of carbolic acid. This will keep; filter each time. The

method is the same as that just described, except that by warming the watch-glass in which the dye is, until bubbles of steam rise, the whole staining can be accomplished in a few minutes. It is not as good as Ehrlich's method. For a double stain use an aqueous solution of methyl blue, and examine in turpentine instead of oil of cloves.

As regards the elastic fibres, the proper way is, to spread a considerable quantity of sputum in a thin layer on the glass over a black surface. Now pick out some of the little whitish points and examine them, they may be elastic fibres. Probably a still surer way is to boil the sputum in a ten per cent. solution of caustic potash. Let stand in a conical glass for twenty-four hours and examine the sediment.

CHAPTER XI.

EXAMINATION OF THE ABDOMEN, LIVER AND BOWELS.

In the examination of the abdomen, we make use of the following methods—inspection, palpation, percussion and auscultation.

It is not intended that, in the examination of the abdominal viscera, the applicant should always be stripped, as such examination would not be called for; sufficient evidences of disease would exist by which the Examiner could make positive statements upon his paper that would cause the rejection of the applicant by an examination made over the under-shirt, and, in a majority of cases, it will not be found necessary to remove the ordinary linen shirt which every one wears; it can be rolled up so as to be out of the way.

Inspection.—Here, as in the examination of the heart and lungs, we note the form and movement of the abdomen.

Palpation.—This, in the examination of the abdomen, occupies the important place, just as auscultation does in the examination of the heart and lungs. Careful palpation of the abdomen should be made, in order to bring out any irregularities which should denote tumors, enlargement of the liver or spleen, such as cancer, disease

of the mesenteric glands, etc. The right iliac fossa should be carefully examined for evidences of typhlitis or perityphlitis, and the applicant should be carefully questioned in regard to symptoms of gastric cancer, such as pain, recent rapid loss of flesh, hemorrhages from the stomach, vomiting immediately before, at or after meals. The presence of fluid in the abdominal cavity should always be looked for, and if the applicant be a female, all enlargements or tenderness in the ovarian region should be particularly studied.

Percussion.—As stated in a former chapter, the normal percussion note of the abdomen is tympanitic. By percussion we are enabled to recognize the presence of fluid or tumors in the peritoneal cavity.

If any suspicious symptom should appear in the abdominal examination, the applicant should be required to lie on a lounge and a more careful examination made by means of deep pressure or more forcible percussion, and then the clothing of the part should be removed.

Auscultation.—In the examination of the abdomen, auscultation is a minor feature, but the Examiner should be familiar with the sounds, in order not to be misled when they are conducted, as is frequently the case, some distance into the thorax. It is valuable in suspected pregnancy or aneurism.

THE LIVER.

The liver is carefully examined while the applicant is standing, for any evidence of tenderness or bulging. Its situation is marked by percussion. It is scarcely necessary to state the liver outlines; it does not reach below the territory of the ribs and extends upward about the breadth of two fingers (see Plate 3). On the opposite side the spleen can also be outlined.

THE BOWELS.

It is well, especially if, in the course of conversation with the applicant, any suspicion should arise in the mind of the Examiner as to disease of the rectum, that certain pointed questions should be asked in regard to hæmorrhoids, cancer of the rectum, etc., and if the Examiner deem it necessary, he should insist upon making a personal examination of the rectum, for if hæmorrhoids, fistula or cancer of the rectum exist, the applicant is not a fit subject for life insurance.

This is a very important matter, as, of course, these parts are

concealed, and the Examiner is not called upon to make a thorough rectal examination, nor indeed, to examine the private parts of an individual unless his suspicion has been aroused. There have been cases of concealed rectal cancer, cancer of the testicles, etc., that have escaped most cautious Examiners, and it is on this account that attention is especially called to this subject.

If the applicant gives a history of rupture the Examiner should see for himself that a suitable truss is worn; every case of "cured rupture" should be carefully examined.

CHAPTER XII.

EXAMINATION OF THE KIDNEYS.

One of the most difficult subjects of all in connection with an examination for life insurance is the detection of the earliest evidence of disease of the kidneys. The normal amount of urine passed in twenty-four hours by an adult male is about forty-five ounces, and he usually urinates about four times a day. The fluctuations in amount and frequency are dependent upon weather, exercise and food. If the applicant is examined at the Company's Office or the office of the Medical Examiner, a pitcher or cup should be handed him, and he should be requested to pass a sample of his water for examination; if this is impossible, the Examiner should give the applicant a wide-mouthed vessel and ask him to step into the nearest closet and pass some of his water into the vessel. The reason that it is important, in cases where large amounts of insurance are demanded, that the urine should be passed in the presence of the Examiner is, that cases have been known wherein applicants have carried with them urine which they have substituted for their own, the former being healthy and the latter diseased; of course, this is impossible if the urine is warm when handed to the Examiner.

Although the Medical Examiner should always be on his guard to prevent substitution of urine, and, indeed, to prevent all attempts at fraud, it is a great mistake for him to treat applicants as if their intention was always to defraud the Company. Fraudulent cases

are constantly met with in a life insurance examination, but they are exceptions to the general rule, and no Examiner should allow any word or act of his to throw any suspicion on the applicant who is before him ; his manner should always be courteous, he should be reserved in his opinions, and he should retain his views for his Medical Chief at the Home Office of the Company, and should any doubts arise in his own mind, he should, by tact and watchfulness, guard against any perpetration of fraud. I emphasize this fact, because complaints are frequently made that Examiners are not sufficiently courteous to an applicant ; that they frequently offend many, who are perfectly honest in their desire to obtain insurance, by making evident suspicions which arise in their own minds, but which have no foundation in fact ; that they are frequently too fussy, too talkative, and in this way hinder the business of the Company instead of increasing it. A hint in this direction may frequently be of service to those who do not understand what is wanted of them, and, indeed, this book is not intended to instruct the experienced Examiner, who has learned by years of service and constant contact with individuals exactly what the duties of his position are, but it is intended simply to instruct and to put on his guard the recent appointee, who is willing to learn if he only knows where to obtain the information.

If it is impossible for the applicant to give a sample of his urine at the time of the examination, the proper thing to do is to hand him a clean bottle, with the Examiner's address, and ask him to fill it with his own urine, and to send it, together with a note, to the Examiner, stating that the urine contained in the bottle is that which he voided, and the Examiner should send this note with his report to the Home Office of the Company.

SPECIFIC GRAVITY.

The specific gravity of urine in health varies between 1015 and 1025. It shows the ratio between the water and solids in the urine. It may be increased by less water or more solids, and may be diminished by more water or less solids, all within the bounds of health.

The specific gravity should first be taken ; this is important for several reasons, one is to prevent the substitution of pure water for urine ; secondly, because usually urine containing sugar is of greater specific gravity (1025 or more), though exceptions to this exist ;

thirdly, because low specific gravity with a large quantity of urine passed, is diagnostic of diabetes insipidus, and also because low specific gravity (1010 or less) with or without a slight trace of albumin is found in the earlier or later stages of some forms of Bright's disease; this latter is a most important matter and not to be overlooked.

The urine should now be allowed to cool, and then a careful series of tests made.

ALBUMIN.

It is most important that the urine should be examined for the *slightest trace* of albumin. It may be present in one sample and absent in others. It may not record itself until the test-tube has been set aside for a while. This form of albuminuria may be the *earliest* indication of kidney disease.

The examination for albumin should be made in the following manner: It simply requires a perfectly clean test-tube, a spirit lamp, and some pure nitric acid and a background of black, which will more readily show a trace of albumin should it appear. A small quantity of urine should be placed in the test-tube, and should be boiled thoroughly, preferably the upper portion boiled first, and if a cloud shows itself, it is either caused by phosphates or albumin, and in a majority of the cases it will be found to be phosphates. A drop of nitric acid allowed gradually to trickle down the test-tube when it reaches the urine will soon dissolve the phosphates and leave the urine perfectly clear; but should this clearing not take place, it is probable that the cloud is due to albumin; and to prove this, some cold urine should be placed in a test-tube, and by means of a pipette, a small quantity of nitric acid should be allowed to gradually flow down the sides of the tube; being heavier, it will sink to the bottom, and by holding the test-tube against a black background, the point of contact between the acid and the urine should be carefully examined, and if a cloudy or opalescent ring is noticed, it is probably due to albumin. If it fails to appear, set the test-tube aside and examine again in the course of an hour; this can only be useful if the test be boiled alone, as nitric acid would dissolve the albumin.

Where leucorrhœa is suspected, or has existed, in a female applicant, the cloud may be mucus, or the mucine contained in the discharge; in such cases it is well, before pronouncing definitely, to filter the urine, and then test it. The best filter is probably a small

quantity of cotton, chemically clean, in a glass funnel. The albumin of pus will not filter out.

If the amount of albumin be very small indeed, merely a trace, the applicant should be required to furnish another sample of his urine—no explanation should be given that might awaken his suspicion—and a microscopical examination of this should be made; but a report of the first finding should always be made to the Home Office.

There is a form of albuminuria which is occasionally met with, called the "albuminuria of adolescence," as it usually occurs at that time and is more common in boys. The amount of albumin varies; it is increased after meals; is absent frequently in the morning; follows exercise and fatigue. *No casts are ever found in such urine.* It is supposed that no structural change in the kidney and consequent obstruction to the circulation has occurred, but it is possibly due to some defect in the composition of the albumin in the blood, the result of mal-assimilation, or to a neurosis.

T. Grainger Stewart tells us that there is no sufficient proof that albumin is normally discharged from the human kidneys, therefore, we cannot but believe that the presence of albuminuria is, to a more or less extent, pathological, and even when not associated with any other evidences of disease of the kidneys, it renders the applicant, for the time being, uninsurable, as would bronchial catarrh, anæmia, and so forth. The retinal symptoms which are associated with chronic Bright's disease, though usually appearing late, should be sought for in all cases where a suspicion of Bright's disease exists, and an Examiner should add an ophthalmoscopic examination to his other methods of investigation in doubtful cases.

SUGAR.

For the detection of sugar, care is necessary.

A slight amount of sugar found after meals has by no means the same significance that attends the trace of albumin.

A slight trace of sugar, which is not constant, is not always the sign of diabetes mellitus, and may be an evidence of transient functional disorder, especially in young persons; nevertheless it should give rise to suspicion and be most carefully investigated.

First of all, it is absolutely essential to have chemicals that are of undoubted value. Fehling's test solution is undoubtedly the best, when new and carefully prepared, and every Examiner for

Life Insurance should have on hand a supply which is perfectly clear and has not undergone decomposition, or, at least, he should have on hand the materials so that he can make it up for himself. The large drug houses supply it on demand, and a majority of the drug stores at the present day are capable of making up solutions as often as the practitioner desires to have them made; those physicians living in country districts who propose to act as Insurance Examiners should prepare themselves for this examination by having the formula of Fehling's solution,* so that they can prepare it when needed.

Pour a small quantity of the solution in a test-tube, dilute it with four times the quantity of water, and boil it. Should it not discolor, and no precipitate take place, the solution will be satisfactory. An equal quantity of urine is now poured slowly down the side of the tube, and the two are boiled together for a short time. The presence of sugar will show a decided reaction, and the mass turning orange red will convince one that sugar is present; of course, when a large amount of sugar is found, after it has cooled and settled, the red suboxide of copper will be found deposited in the bottom of the tube. A high specific gravity is in favor of the presence of sugar.

If there be no pure, fresh Fehling's solution, it is well to make use of Trommer's test, which consists of equal parts of urine, liquor potassa, and a solution of sulphate of copper, 10 grains to the ounce. These are mixed in a test-tube and shaken until they are clear. They are then boiled, and if the solution becomes opaque and an orange-red precipitate is formed, sugar is undoubtedly present.

When no sulphur is present in urine, and therefore the urine is free from albumin, the *bismuth* test for sugar is an excellent one. Add to urine in test-tube an equal volume of liquor potassæ or sodæ and a *small pinch* of ordinary subnitrate of bismuth; then boil. If sugar is present black metallic bismuth will be deposited.

In transmitting the report to the Home Office, as to the results

* Fehling's test is absolutely certain, and the standard solution is prepared as follows: Take 34.64 grammes (1 Troy ounce, 54 grains) of pure crystallized sulphate of copper previously powdered and pressed between blotters and dissolved in about 200 c. c. (6 fluid oz., 5 fluid dr.) of distilled water. Take 173 grammes (5 Troy oz., 4 dr., 30 grains) of tartrate of soda and potassa (Rochelle salts), and dissolve in 480 c. c. (16 fluid oz.) of a solution of pure caustic soda, sp. gr. 1.14. Mix the two solutions and dilute with distilled water to 1 litre (21 pints).

This is apt to decompose after several months, and should be kept in a cool place in a glass-stoppered bottle.

of the tests for both sugar and albumin, it is always necessary to state whether or not the applicant exhibits any of the symptoms attendant upon diabetes or upon Bright's disease.

A test also based on the precipitation of cuprous oxide when glucose is boiled with copper salts in the presence of alkalies has been arranged by Dr. W. S. Haines, of Chicago. It is convenient for country practitioners.

The test is prepared in two solutions, bottled separately to insure keeping. Full directions are given with each test, and test-tubes with holder are packed with the bottles in each box. The test is thus ready for immediate use and takes but a moment for its manipulation.*

DIRECTIONS.—Mix in a test-tube equal parts of Parts I and II, filling the tube about one-third full. Heat to boiling, and add a little of the urine. A change at once or on further boiling, to an orange or reddish hue with turbidity, indicates diabetic sugar. This change should occur within a minute, as continued boiling may produce a precipitate with other matter present in the urine. If no turbidity appears, to show that the solutions are uninjured by age add to the hot mixture and urine a few drops of dissolved glucose or honey and boil. If the orange turbidity is now produced, it proves the virtue of the solutions and previous absence of glucose.

Undoubtedly the fermentation test is the most certain of all, though not very delicate, and should be employed when sugar is suspected. This is made by means of the saccharometer.

The saccharometer here presented is one of the simplest in use.

DIRECTIONS.

Take one gramme of commercial compressed yeast (or $\frac{1}{16}$ of a cake of Fleischmann's Yeast), shake thoroughly in the graduated test-tube with 10 c.c. of the urine to be examined. Then pour the mixture into the bulb of the Saccharometer. By inclining the apparatus the mixture will easily flow into the cylinder, thereby forcing out the air. Owing to the atmospheric pressure the fluid does not flow back but remains there.

The apparatus is to be left undisturbed for 20 to 24 hours, in a room of ordinary temperature.

If the urine contains sugar, the alcoholic fermentation begins in about 20 to 30 minutes. The evolved carbonic acid gas gathers at the top of the cylinder, forcing the fluid back into the bulb.

On the following day the upper part of the cylinder is filled with carbonic acid gas. The changed level of the fluid in the cylinder shows that the reaction has taken place and indicates by the numbers—to which it corresponds—the approximate quantity of sugar present.

* Prepared by Willis G. Gregory, M.D., Ph.G., Manufacturing Pharmacist, Buffalo, N. Y.

If the urine contains more than one per cent. of sugar, then it must be diluted with water before being tested.

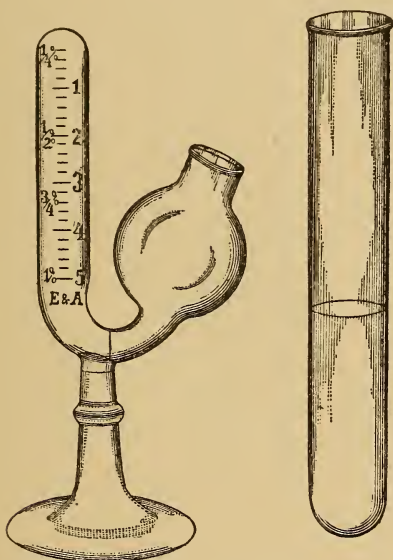
Diabetic urines of straw color and a specific gravity of 1018-1022 may be diluted twice; of 1022-1028, five times; 1028-1038, ten times.

The original (not diluted) urine contains in proportion to the dilution two, five or ten times more sugar than the diluted urine.

In carrying out the fermentation test, it is always recommendable to take besides the urine to be tested, a normal one, and to make the same fermentation test with it.

The mixture of the normal urine with yeast will have on the following day only a small bubble on top of the cylinder. That proves at once the efficacy and purity of the yeast.

FIG. 7.



Max Einhorn, M.D. Eimer & Amend, New York.

If there is likewise in the suspected urine a small bubble on the top of the cylinder, then *no* sugar is present, but if there is a much larger gas volume, then we are *sure* that the urine contains sugar.

UREA.

In rare cases it may be necessary to estimate the amount of urea, and for that purpose Dr. Chas. Doremus' apparatus is the simplest.

The apparatus shown in the cut is designed for the rapid approximate estimation of urea. It yields, when the test is carefully made, results closely in accord with the theoretical.

That determination of the quantity of urea voided is of importance in diag-

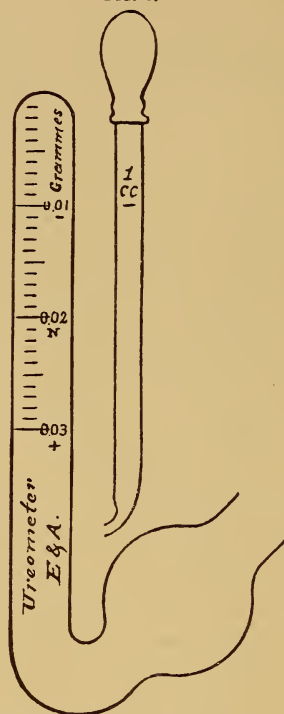
nosis has long been felt, but the difficulties met with in the manipulation of the tests which were to supply the data were too irksome to physicians.

REAGENTS NECESSARY.

The Sodium Hydrate solution (100 grammes to 250 c.c. of water, or 6 ozs. to 1 pint of water) will keep indefinitely when tightly stoppered.

The Bromine may be removed from the bottle in which it is kept by means of the nipple pipette.

FIG. 8.



Eimer & Amend, New York.

1 c.c. suffices for a test. More can be removed if a quantity of hypobromite is to be made up. Some care must be exercised in handling the Bromine, since it gives off irritating fumes—but by the above method of procedure no inconveniences ought to be experienced.

The concentrated hypobromite must be diluted with its own volume of water. This can be done approximately.

The long arm and the bend of the ureometer must be filled with the hypobromite.

Having washed the pipette draw up exactly 1 c.c. of urine, pass the pipette through the bulb of the ureometer as far as it will go in the bend. Compress the nipple *gently and steadily*. The urine will rise through the hypobromite and the urea instantly decompose, giving off nitrogen gas.

Withdraw the pipette after the urine has been expelled, taking care not to

press the nipple hard enough to drive the air out after the urine, and read the volume of gas after allowing the froth to subside. *The ureometer indicates, according to its graduation, either in milligrammes of urea in 1 c.c. of urine or grains of urea per fluid ounce of urine.*

It also indicates by the signs + and — on either side of the central division whether the urea is present in a normal quantity or is increased or diminished.

In this connection it is well to remember that no two specimens from the same individual are alike when collected at different times of the day. Unless the urine of 24 hours is collected, mixed and a specimen taken, no accurate data can be had. Next to collecting the 24 hours urine and ascertaining the quantity voided, the morning urine, that passed on rising, is the best upon which to base a diagnosis.

When the total quantity voided in 24 hours is known the calculation of the amount of urea is very simple. Multiply the result found in milligrammes by the number of cubic centimetres voided, or the grain per fluid ounce by the number of ounces voided.

The percentage by volume, or milligrammes of urea per 100 cubic centimetres of urine, is ascertained by multiplying the milligrammes of urea found by the test by 100.

For country practitioners it is absolutely necessary to have some convenient method of making these urinary tests. There is sold an excellent pocket-case, which has the advantage of a small alcohol lamp attached to the top of the case (see Fig. 9).*

The tests employed are as follows:—

ALBUMIN TEST POWDER.

Keep in the office two bottles, the one containing pulverized citric acid, and the other pulverized potassium ferrocyanide (yellow prussiate of potash). *The pocket reagents bottle is to be filled at intervals of about two weeks with approximately equal quantities of these powders and thoroughly mixed by shaking. They must be kept perfectly dry.*

To use, take about a drachm of the suspected urine and transfer to the test-tube with the aid of the pipette. Then drop into this about two or three grains of either of the powders above mentioned. If albumin be present a white cloud of albumin will immediately appear at the bottom of the tube, which can be readily seen on slight agitation. If the urine is slightly clouded it is best to add the powder to a small quantity of water in the test-tube, and dissolve it previous to the addition of the urine. The urine is then added carefully with the pipette so that the two solutions do not mix. At the line of separation of the two liquids a zone of coagulated albumin will be seen, when it is present.

FIG. 9.



Bartley's Pocket Urinary Test Case, with Spirit Lamp.

*The Physicians' Manufacturing Supply Co., 140 Nassau St., New York.

SUGAR TEST.

Formula: Indigo-carmin, 1 part,
 Sodium carbonate, 20 parts.

Mix the dry powders and rub in a mortar.

The indigo-carmin is a sulphindigotate of sodium, made as follows: Take pure indigo and rub into a thin, creamy paste with strong sulphuric acid; add water in sufficient quantity to thoroughly dissolve the sulphate of indigo, neutralize with carbonate of sodium, filter, wash once with a solution of carbonate of sodium, dry, and then mix as above.

To use this powder a small quantity is put into about a drachm of the suspected urine, and this is then heated to boiling. If sugar be present, the color is changed to green, violet, red and finally yellow. On agitating this yellow liquid the colors reappear in the reversed order. In testing for traces of sugar, only sufficient of the powder should be added to give a faint blue color to the urine. This test is delicate, is not affected by any other ingredient likely to be found in urine, and is permanent. These powders are sent with the case.

MICROSCOPE.

A microscopical examination of the urine is required by many companies for all risks above a certain amount, and, when possible, should also be made by the Examiner when a small trace of albumin is found, or when the urine is of low specific gravity. This test, of course, requires a knowledge on the part of the Examiner as to exactly what is needed, and great care is necessary in making it. The urine should be collected in a chemically clean vessel, and should stand in a conical glass, covered, for at least twelve or more hours before examination, and then a small quantity should be drawn from the lowest portion of the glass by means of a chemically clean pipette, and placed under the microscope on a glass which is absolutely clean, previously washed with alcohol and covered with a glass cover treated in the same way. Several examinations should be carefully made, as in many cases possibly only one cast may be found in a field, and, indeed, several specimens may be examined without any being found at all.

If the urine is very highly colored, the color may be due to the presence of blood, uric acid or bile, all of which should be carefully looked for; the former, usually associated with albumin, can be detected by means of the microscope (which is the best test of all), the latter by means of allowing a few drops of urine and nitric acid to be placed separately upon a china plate and allowed to run together; the line of contact, if bile is present, will show a variety of colors, from green, violet or blue to red.

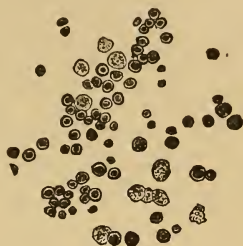
The blood corpuscles may be free, as in Figs. 10 and 11 or they may be in casts. The former will point to some irritation of the pelvis of the kidney, or of the ureters or bladder, due to gravel or

FIG. 10.



Shriveled blood corpuscles in urine (catarrh of bladder), with numerous lymph corpuscles and crystals of triple phosphate $\times 350$.

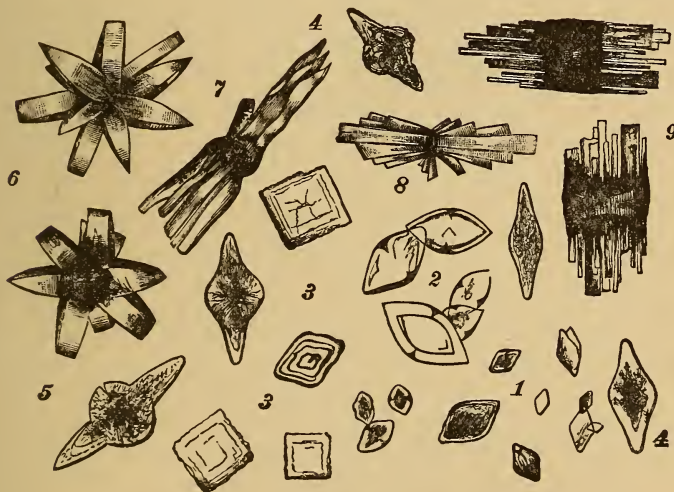
FIG. 11.



Colored and colorless blood corpuscles of various forms.

malignant disease; the latter to an inflammation or congestion of the kidney. In both cases albumin will be present in more or less amounts. *Pus* frequently is present with blood in the former case.

FIG. 12.



Forms of Uric Acid.

- 1, Rhombic plates. 2, Whetstone forms. 3, Quadrate forms. 4, 5, Prolonged into points. 6, 8, Rosettes. 7, Pointed bundles. 9, Barrel forms precipitated by adding hydrochloric acid to urine.

An excess of *uric acid*, which will give a high color to the urine, is noted by its appearance, the acid reaction, and also the presence of

uric acid crystals under the microscope (see Fig. 12). Normal urine should show slightly acid reaction by litmus paper. The acidity is not due to uric acid, but probably to the acid phosphate of sodium.

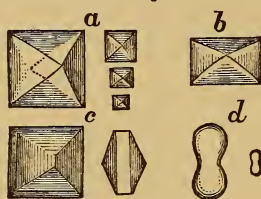
The presence of *uric acid* in large amounts is important in connection with the history of gout, and gout sooner or later leads to interstitial nephritis.

Rheumatism also has an important bearing upon probable longevity, especially when the applicant has had frequent attacks and when the disease is hereditary. The urine in such cases may contain uric acid and urates in large amounts. Therefore, when uric acid or urates are found in quantity especial attention should be paid to the heart and arteries, and a careful search be made for albumin and casts.

Urine alkaline from fixed alkali may be indicative of anæmia, chlorosis, exhaustion from overwork, care and anxiety.

It is well to bear in mind that the coloring matter of the urine in

FIG. 13.



Oxalate of Lime.

a-b, Octahedra. c, Compound forms. d, Dumb bells.

these cases of excess of uric acid may frequently give a slight reddish tint to the urine during the test for sugar with Fehling's solution, and the Examiner finds it difficult to decide whether this is due to the uric acid or a slight trace of sugar; but this can be definitely settled by means of the bismuth or the fermentation test.

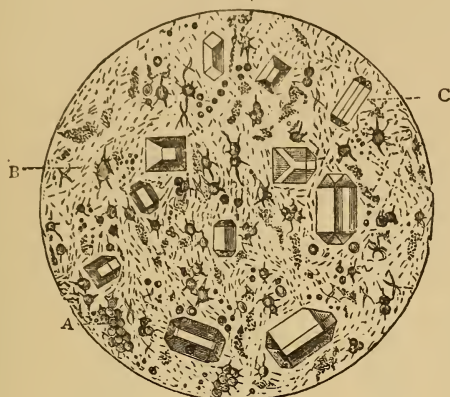
The presence of oxalate of lime in urine can be detected readily by the microscope (see Fig. 13), and when associated with a history of dyspepsia, may have some important bearing on the case; so also would the presence of crystals which denote the fermentation of urine, either acid or alkaline (see Figs. 14 and 15). Especially are all these crystals of importance should the case present a history of nephritic colic or gravel, of disease of the prostate gland or bladder.

Casts should be carefully searched for. They may be found in acute disease of the kidney and also in the chronic forms. They

may be disassociated with the presence of albumin, the albumin appearing earlier or later in the disease.

It is not necessary in this work to dwell upon the different

FIG. 14.



Deposit in Ammoniacal Urine (alkaline fermentation).

A, Acid ammonium urate. B, Ammonio-magnesium phosphate. C, Bacterium ureæ.

varieties of kidney disease, and their diagnosis by means of casts, but all that is necessary is to show that their presence should invariably reject the applicant for insurance.

FIG. 15.



Deposit in "Acid Fermentations" of Urine.

A, Fungus. B, Amorphous sodium urate. C, Uric acid. D, Calcium oxalate.

The varieties of casts most usually found in urine are seen in the accompanying Figs. (16, 17, 18). They may be few in a field, and, indeed, several examinations may be made before a single cast is discoverable. The casts of least significance are the hyaline.

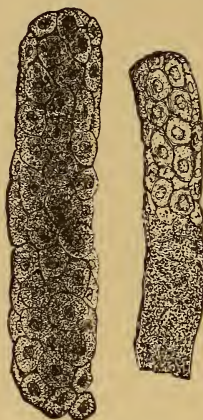
The microscope will also reveal bladder epithelium, and in the female vaginal epithelium; of course, these would be of no importance whatever unless the question should arise as regards the difficulty of deciding between some forms of bladder epithelium and that which comes from the pelvis of the kidney.

FIG. 16.



Hyaline Casts.
B, With leucocytes. C, With
renal epithelium.

FIG. 17.



Epithelial Casts.

FIG. 18.



Finely Granular Casts.

It is well to bear in mind that urine that is preserved for microscopical examination should have a small quantity of salicylic acid added to it to preserve it, and this does not interfere with the examination.

DISEASES OF THE GENITO-URINARY ORGANS.

The applicant should also be questioned as to any disease affecting the urinary organs, cystitis, enlargement of the prostate gland, frequency of urination, especially at night, the history of stricture, diseases of the testicles, stone in the bladder, enlargements of the inguinal glands, chancre, and all that pertains to syphilis.

The applicant should always be carefully questioned for the evidences of constitutional syphilis, if there is the slightest suspicion of it, especially if he acknowledges having had chancre. The Examiner should remember the importance of sore throat, alopecia, of nocturnal pains in the bones, and of an eruption which does not itch. It is simply necessary to call the attention of the Examiner to these matters, which might otherwise be overlooked.

CHAPTER XIII.

NERVOUS SYSTEM.

During the course of the examination the Examiner must bear in mind the importance of the nervous system as affecting life insurance. The following symptoms would show some disease, and should be carefully looked into: "Slowness of speech, sentences broken off or uncertain, deficiency in memory, agitated lips, tremulous tongue, or tongue drawn to one side, inequality of pupils, double sight, step defective in balance."

The applicant should be asked to stand with eyes closed, so that the Examiner may detect locomotor ataxia; all evidences of paralysis should receive careful attention. Bell's palsy, or ordinary facial paralysis from cold, should be noted as distinct from paralysis of central origin. Facial palsy is frequently attendant upon disease of the middle ear. Every applicant should be carefully questioned in regard to disease of the ear, both acute and chronic. Suppuration of the middle ear may cause death (1) by caries of the temporal bone and its consequences, (2) by septic phlebitis, (3) by tuberculosis. Chorea should be noted, and local peripheral palsies should also be differentiated from those of central origin. Neuralgia, headache and vertigo should be most carefully investigated, and the results stated on the examination paper, with special reference to epilepsy in its minor and major form; the attacks of neuralgia, should be carefully explained, particularly if they show any evidences of angina pectoris.

The abuse of narcotics, tobacco, or drink of any kind should never be absent from the mind of the Examiner, as such cases frequently come before him for investigation; if the least suspicion should arise as regards the excessive use of stimulants, the Examiner should closely question the applicant's past habits, and endeavor as far as possible to get a correct statement as regards the same, and note whether they have produced any lesion of the nervous system. Syphilis often shows its effects upon the nervous system when other manifestations of it are absent, and these must always be carefully looked for. Eccentricities, mental peculiarities should be noted; so, also, any history of melancholia, nervous prostration, insanity, or anything that might lead to suicide.

CHAPTER XIV.

EXAMINATION OF WOMEN.

Most Companies at the present day insure women, and some at the same rates as they do men, and hence it becomes necessary that a most careful examination should be made of women, especially in regard to those diseases which are of vital importance. It is an extremely difficult matter to give the same thoroughness of examination to a woman as to a man, but an Examiner should not hesitate, should he find it necessary, to make a thorough examination, in order to satisfy himself that the applicant is in every way insurable.

Women are much more liable to phthisis than men, and, therefore, stress should be laid upon the examination of the lungs for the detection of the earliest evidence of pulmonary disease. (See also Chapter VIII.)

It has been taught that physiologically women breathe with their apices, and that in men the breathing is more abdominal; but T. J. Mays has shown that in the Indian girl, whose thorax has never been imprisoned by corsets, the respiratory movement is the same as that in men. This is interesting from a life insurance point of view.

Diseases of the breast are often of great importance, and as cancer of the breast is most apt to occur about the time of the menopause, the Examiner should especially inquire into any tumors or tenderness in that region, the presence of enlarged glands in the axilla, and note any evidence of cachexia; he should also inquire in regard to cancer elsewhere, especially of the uterus; he should inquire particularly into the menstrual function, and note on his paper any points that are of importance. If the applicant has reached the time of the menopause, and is still "unwell," the Examiner should inquire particularly into the character of the discharge, and the length of time it exists, as it is known that one of the most important evidences in favor of cancer of the uterus is the prolongation of the menopause beyond its normal period, possibly after 50 years of age.

The Examiner should also inquire into enlargements of the abdomen, tenderness in that region, the presence of tumors, either solid or fluctuating. He should inquire particularly into the char-

acter of the husband, if the applicant be married, and also into the subject of her child-bearing.

The questions will require *tact* on the part of the Examiner, and should he elicit answers which are not perfectly satisfactory, it is well for him before he sends his report to the Home Office, to consult the family physician, and obtain his views in regard to the case.

CHAPTER XV.

SUMMARY.

Of course the question as regards the acceptance of the risk depends upon the decision made at the Home Office of the Company, and it is the Examiner's duty to make his statements clear and correct, in order that they may form the proper basis for a decision.

Having now completed the paper, before the applicant leaves, the Examiner should carefully read over the paper and see that every question has been thoroughly answered, that the signatures are in their proper places, and the instructions from the Medical Department of the Company should be referred to, so that no further correspondence will be necessary from the Home Office. This is a matter which, from a business point of view, is a most important one, and it is one to which Examiners, as a rule, pay the least attention. There are certain legal requirements that go to form a contract, and an application for insurance is a contract with the Company, and these have to be fulfilled; and though they may appear to be trivial and of little consequence, yet, from the Home Office view, they are most important, in order that all questions may be settled at once before a policy is issued, so as to prevent any contention after the policy has been issued or upon the death of the applicant.

If the Home Office requires that the examination blank shall be mailed direct to the Medical Director immediately upon its completion, this should be done before the Examiner allows his attention to be called away by other work.

The little matters that appear trifling to an Examiner assume an importance when received at the Home Office which the

Local Examiner cannot estimate, and frequently give rise to delay which may interfere seriously in the placing of the policy, and it will annoy the agent, and consequently give rise to a feeling which prevents that harmony that should exist between all branches of Life Insurance. A good Agent will never complain that a risk is declined if the Examiner has done his conscientious duty and the applicant is not fit for insurance, but where the placing of the policy has been interfered with by carelessness or inattention on the part of the Examiner, complaints will naturally arise and create unfavorable impressions at the Home Office.

PART II.

INSTRUCTIONS

TO

MEDICAL EXAMINERS,

AS ISSUED BY THE

VARIOUS LIFE INSURANCE COMPANIES.

ÆTNA LIFE INSURANCE COMPANY, Hartford, Conn., . .	<i>G. W. Russell, M. D.</i>
*BERKSHIRE LIFE INSURANCE COMPANY, Pittsfield, Mass.,	<i>F. K. Paddock, M. D.</i>
BROOKLYN LIFE INSURANCE COMPANY, New York City,	
CONNECTICUT GENERAL LIFE INSURANCE COMPANY, Hartford, Conn.,	<i>M. Storrs, M. D.</i>
CONNECTICUT MUTUAL LIFE INSURANCE COMPANY, Hartford, Conn.,	<i>Geo. R. Shepherd, M. D.</i>
EQUITABLE LIFE ASSURANCE SOCIETY OF THE U. S., New York City,	<i>E. W. Lambert, M. D.</i> <i>Edward Curtis, M. D.</i>
*GERMANIA LIFE INSURANCE COMPANY, New York City,	<i>Chas. Bernacki, M. D.</i>
HOME LIFE INSURANCE COMPANY, Brooklyn, N. Y., . .	
JOHN HANCOCK MUTUAL LIFE INSURANCE COMPANY, Boston, Mass.,	<i>Frank Wells, M. D.</i>
LIFE INSURANCE COMPANY OF VIRGINIA, Richmond, Va.,	<i>H. Cabell Tabb, M. D.</i>
MARYLAND LIFE INSURANCE COMPANY, Baltimore, Md.,	<i>F. Donaldson, M. D.</i>
MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY, Springfield, Mass.,	<i>F. W. Chapin, M. D.</i>
MICHIGAN MUTUAL LIFE INSURANCE COMPANY, Detroit, Mich.,	<i>Henry F. Lyster, M. D.</i>
MUTUAL BENEFIT LIFE INSURANCE COMPANY, Newark, N. J.,	<i>Edgar Holden, M. D.</i> <i>G. A. Van Wagenen, M. D.</i> <i>Jos. C. Young, M. D.</i>
MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, New York City,	<i>G. S. Winston, M. D.</i> <i>W. R. Gillette, M. D.</i>
NATIONAL LIFE INSURANCE COMPANY, Montpelier, Vt.,	<i>A. B. Bisbee, M. D.</i>
NEW ENGLAND MUTUAL LIFE INSURANCE COMPANY, Boston, Mass.,	<i>John Homans, M. D.</i>
NEW YORK LIFE INSURANCE COMPANY, New York City,	<i>Henry Tuck, M. D.</i> <i>A. Huntington, M. D.</i>
NORTHWESTERN MASONIC AID ASSOCIATION, Chicago, Ill.,	<i>G. O. Taylor, M. D.</i>
NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY, Milwaukee, Wis.,	<i>Lewis McKnight, M. D.</i>
PENN MUTUAL LIFE INSURANCE COMPANY, Philadelphia, Pa.,	<i>J. M. Keating, M. D.</i> <i>O. P. Rex, M. D.</i>
PHŒNIX MUTUAL LIFE INSURANCE COMPANY, Hartford, Conn.,	<i>A. W. Barrows, M. D.</i>
*PROVIDENT LIFE AND TRUST COMPANY, Philadelphia, Pa.,	<i>Thomas Wistar, M. D.</i>
PROVIDENT SAVINGS LIFE ASSURANCE COMPANY, New York City,	<i>Frank S. Grant, M. D.</i>
*STATE MUTUAL LIFE ASSURANCE COMPANY, Worcester, Mass.,	<i>Thos. H. Gage, M. D.</i> <i>Albert Wood, M. D.</i>
*TRAVELERS' LIFE INSURANCE COMPANY, Hartford, Conn.,	<i>G. Pierrepont Davis, M. D.</i>
UNION CENTRAL LIFE INSURANCE COMPANY, Cincinnati, Ohio,	<i>Wm. B. Davis, M. D.</i>
UNION MUTUAL LIFE INSURANCE COMPANY OF MAINE, Portland, Maine,	<i>T. A. Foster, M. D.</i>
*UNITED STATES LIFE INSURANCE COMPANY, New York City,	<i>J. P. Munn, M. D.</i>
WASHINGTON LIFE INSURANCE COMPANY, New York City,	<i>Jno. W. Brannan, M. D.</i>

THOSE COMPANIES MARKED WITH AN ASTERISK ISSUE NO SPECIAL INSTRUCTIONS TO THEIR MEDICAL EXAMINERS.

ÆTNA LIFE INSURANCE COMPANY.

EXTRACTS FROM INSTRUCTIONS TO MEDICAL EXAMINERS.

The application of the person to be examined should always be in the hands of the Examiner, and carefully read, before the examination is made. If anything of past or present disease is noticed, special attention should be given to it, and if there appears to be anything of an hereditary disease in the family history, the Examiner should inquire concerning it thoroughly, though the applicant himself may present no indications of the same; and the inquiries should be extended to both branches of the applicant's family.

An experience of many years leads us to place much value upon the family record; it is of more importance, we think, than is usually attached to it by Examiners, many of whom, we know, have no hesitation in recommending for insurance those who have had parents and other relatives die from consumption or allied diseases. Notwithstanding all our precautions, we find our largest mortality in diseases of this character. The present personal condition of the person to be insured seems in these cases wholly to engross or over-ride all other considerations in the mind of the physician.

It is not thought necessary to give special and explicit instructions for examinations. If the Examiner is well qualified, all necessary inquiries will occur to him. But it is well to remember that the applicant for insurance regards himself usually as occupying a very different position from that of an ordinary patient; in the latter he is often disposed to magnify his infirmities, while in the former he is more likely to conceal them.

The sound common-sense of the medical man is especially necessary for an Examiner; whatever there is of doubt in any case, let it be given in favor of the Company. We are not so anxious to do business that we will accept uncertain or doubtful risks.

Again, let us point out to the Examiner that he is the employee of the Company; to the Company he is responsible, and to no one else; he is paid the same fee whether a favorable or unfavorable report is made, and will be continued in his position if he is skilled in his profession and is careful in his examinations. And we wish to impress upon him the necessity of not alone exercising his skill, but also his independence in expressing his opinions. His integrity must be above reproach; no outside influence whatever should be allowed to sway him; all the facts should be carefully reported, and his decision given with the whole case fairly in his mind, considering the present condition, the occupation, location, habits, family history, etc.

Our losses from the direct or indirect influence of the use of alcoholic stimulants are larger than they should be. No one can persist in the *habitual* use of these agents without having the *probabilities* of his longevity impaired, and it is therefore of great importance that the Examiner should inquire carefully concerning the habits of the applicant. This may be done delicately without offence; but often the evidences of habitual stimulation are apparent enough. No offence ought ever to be taken, for life insurance is a business to be guarded

like other business matters, and must be pursued under the ordinary and well-established guards of safety, if it is to be made successful.

All cases where pregnancy exists should be declined until after recovery from confinement, and great care should be exercised in recommending females between the ages of forty and fifty, or until the "change of life" is fully past.

While deaths frequently occur from "childbirth," "general debility," "dropsy," "change of life," and the like, yet it is believed that these are sometimes reported as the primary causes of death, when the true statement should have been consumption or some hereditary disease. "Dropsy" is but a symptom, and if a member of a family die in childbed, it should be supplemented with "strictly puerperal," as an explanation.

Let Examiners bear in mind that the lately-introduced term of "heart failure," as the cause of death, is most comprehensive, and yet indefinite and unsatisfactory; all such reputed cases should be carefully inquired about, and the true disease discovered, if possible.

Please communicate with the Home Office directly, whenever there is a necessity. You can do so confidentially.

Finally, write legibly, with *black ink*, expressing yourself clearly and with as much positiveness as is possible or prudent.

EXTRACTS FROM INSTRUCTIONS TO AGENTS.

Medical examinations must be made by the regular Examiner of this Company; none other will be accepted.

While the Medical Examiner should be a friend of Life Insurance in order that his influence may not oppose the efforts of the Agent, he is not expected to assist in soliciting, nor to act otherwise than in a purely professional capacity. The fee for examination is \$2.00 in the country, varying to not exceeding \$3.00 in the larger towns and cities; and when an examination of the urine is required, the fee for the entire examination should not exceed \$5.00. The Company will not pay more than the fees here named, and will not pay traveling expenses. Medical Examiners should not be employed to examine a parent, brother, sister, wife, child, or other near relative; nor should an Examiner be employed who is a near relative of the Agent; but in such cases some other regularly appointed Examiner of the Company should be called.


Applications from persons who are ruptured will be accepted only on condition that the insured shall wear a truss. Objection is sometimes made to this requirement, on the ground that the rupture is so slight as to render a truss unnecessary. Slight ruptures are regarded by many physicians as being quite as likely to become dangerous as larger ones, and consequently the above requirement will be adhered to in all cases.

The Company decline to issue policies on the lives of persons older than sixty years, or to exchange an old policy for a new one on the life of a person beyond that age, except when renewing the term of a Renewable Term policy, as provided therein.

Neither will policies be issued on the lives of persons who have nearly or quite lost the sense of sight or hearing, nor, as a rule, upon those who have lost a leg.

Applications on the lives of females are not desired, unless they are unexceptionable, both with reference to family history and the applicant's own health and condition. NO SUCH APPLICATION WILL BE ACCEPTED DURING PREGNANCY. In the medical examination of females, a special certificate, on a blank furnished for the purpose, is required in connection with the regular medical certificate, and the Company limits the amount of insurance upon such lives to \$3000 each.

All applicants must have been successfully vaccinated before the risk will be accepted. If this has not been done before the application is written, a certificate from the examining physician must thereafter be furnished, showing the applicant to have been successfully vaccinated before a policy will be issued.

 Before writing an application for insurance, or before requiring a medical examination, the Agent should make some general inquiries relative to the family and personal history, the occupation, etc., of the applicant. These may be sufficient to determine that the risk is not insurable, so that unavailing labor and expense can be avoided.

As a rule, those persons engaged in exceedingly hazardous occupations will not be accepted for insurance, nor those who desire to travel to uncivilized countries, or to latitudes of extreme heat or cold.

It is believed that excessively large or small persons have not so good a prospect of longevity as those of nearer medium size. No application should be made for insurance on the life of a person weighing over 225 pounds, however well proportioned or unexceptionable in other respects the person may be.

THE BROOKLYN LIFE.

INSTRUCTIONS TO THE MEDICAL EXAMINERS.

The object of every examination for Life Insurance is to discover if there is any existing or predisposing cause to prevent the candidate from reaching what is known to be an average age.

Every Medical Examiner should understand that when he recommends a risk as safely assurable for the whole term of life—whether in limited payments or on ordinary life—he is presumed to express his decided opinion *that the subject not only is in present sound health, but that he also has a fair chance and prospect of living out his "Expectation."* What this Expectation is may be learned from the following table:—

EXPECTATION BY AMERICAN TABLE.

(Standard Adopted by N. Y. State Insurance Department.)

The Expectation at any age is the average *after lifetime* of all the persons at that age, reckoned to the end of the year that each may die.

AT THE PRESENT AGE.	HAS A FAIR CHANCE TO LIVE.	OR TO THE AGE OF
10	48 years longer.	58 years.
15	45 " "	60 "
20	42 " "	62 "
25	38 " "	63 "
30	35 " "	65 "
35	31 " "	66 "
40	28 " "	68 "
45	24 " "	69 "
50	20 " "	70 "
55	17 " "	72 "
60	14 " "	74 "
65	11 " "	76 "
70	8 " "	78 "
75	6 " "	81 "
80	4 " "	84 "

That is, a man recommended on the Life plan, age 25, is judged by the examining physician to possess a fair chance of living to the age of 63; this applies not only to ordinary life, but to Life in 5, 10, 15 or 20 payments—in fact, on any Life plan the Expectation should be considered as probable to be attained.

While it is impossible to say that any individual so selected will certainly attain to the age assigned in the table, yet it is beyond question that those who have inherited good constitutions, live temperately, in healthy localities and follow occupations not specially hazardous, will live longer than those differ-

ently circumstanced. It is *this* difference which forms the basis of life insurance, and hence the importance of selecting only those who approach as near as possible to a healthy standard. To assist the Medical Examiner in performing this duty, and to point out the special sources of danger, deception and error, your attention is specially requested to the following suggestion:—

It is of primary importance that the Examiner should possess a good medical education, and in addition thereto he should have attained that maturity of judgment which follows close observation and reflection upon it. He should take sufficient time to make his examinations (even repeating them if necessary), and record all the facts and conclusions with care and fidelity, continually bearing in mind that it is the interest of every applicant for life insurance to make the best exhibit of his or her own case, and, if so inclined, to understate or withhold important facts, either in their own or family history. *Thus* to be duped, compromises the character of the Examiner for penetration and capacity, against which special vigilance is the only protection.

PREDISPOSITION TO DISEASE.

This is carefully to be considered in reference to tubercular disease—especially that form of it known as pulmonary consumption—and also to diseases of a cancerous or malignant nature; in a word, those which are notoriously transmissible from parent to offspring. Should both parents of the applicant have died from these causes—or only one of them, while several brothers, sisters, or near relatives have developed similar diseases—the predisposition must be considered sufficient to cause rejection; unless applicant shall manifest, on careful examination, a thoroughly sound condition of all the vital organs, and shall exhibit satisfactory physical development as to weight, size and height, shall have lived temperately, and reached at least the age of 35 years, and shall have heretofore enjoyed uniformly good health. Under such circumstances, a Policy of moderate amount may be granted to an individual following a healthy vocation. In case of a strongly inherited predisposition to cancerous diseases, it should be remembered that such diseases do not often develop themselves until the afflicted is 40 or 50 years of age; so that a Policy on the Endowment plan, with 15 years or less to run, may be more safely granted to such an applicant between the ages of 20 and 30 than when older. Again, it must not be forgotten that strong predisposition to disease may be acquired through accidents and violent injuries, severe and repeated attacks of inflammatory disease, fever, rheumatism, profuse hemorrhages, unhealthy residences and employments, combined with irregular or bad habits in eating and drinking; the immoderate use of tobacco, opium and other narcotics; protracted dyspepsia, obstinately constipated bowels, and a torpid skin, are also frequent preludes to confirmed and fatal diseases. Special inquiry should be instituted if the Examiner has the slightest suspicion of syphilis; look well for secondary symptoms, and the effects of specific treatment on the general condition.

When examining those who have passed the middle period of life, remember the tendencies to fatty degeneration in the muscles of the heart, in the coats of the great vessels, causing aneurisms, and in those of the brain, tending to apo-

plexus. The existence of "the arcus senilis" in the eye renders some or all of these conditions very probable.

FEMALE RISKS.

The ascertained fact that female risks have hitherto proved unprofitable renders them undesirable as a class. Parturition and its attending complications largely increase the mortality previous to the age of 50. At or beyond that period cancerous diseases of the breast, uterus and its appendages, make their appearance, and are to be rigidly inquired after. No false delicacy should ever prevent the Examiner from instituting the most searching investigation if any suspicion exists in his mind, and the case should be rejected if the necessary examination is refused. In all cases of pregnancy defer the examination until the recovery from confinement is complete.

PERSONAL EXAMINATIONS.

Before a party is examined, his application *should be* completed and in the hands of the Examiner. When this cannot be had *before the examination* the certificate should be retained by him until the papers are complete, so that the final answer may be made in view of all the facts in the case.

If the party has been recently ill always wait until recovery is perfect.

There are certain general relations established between the organs and the functions of the human body, forming *standards* from which any marked variations (particularly if sudden and rapid) should excite suspicion. Thus the proper relative weight of the body to its height may be estimated from the following table:—

Height.	Weight.	Height.	Weight.
5 ft. 1 in.	120 lbs.	5 ft. 7 in.	145 lbs.
5 " 2 "	125 "	5 " 8 "	148 "
5 " 3 "	130 "	5 " 9 "	155 "
5 " 4 "	135 "	5 " 10 "	160 "
5 " 5 "	140 "	5 " 11 "	165 "
5 " 6 "	143 "	6 " 00 "	170 "

Excessively tall or heavy people are not so long lived as those of medium stature and weight.

The capacity of the chest indicates the relative condition and vital power of its important contents. The Examiner should be particular to give the measurements in inches, taken under the vest and on a line just below the nipples—on *full inspiration and forced expiration*. The average circumference of the chest, when comparatively free from air, varies from 32 to 34 inches. The average expansion should be between 2 and 4 inches, and *nothing below 2 inches should ever be accepted*.

The relation between the frequency of the pulse and the general condition is a well-known standard. Thus a pulse below 60 per minute, in a young subject, should excite suspicion; equally so a pulse which persistently, and under repeated favorable conditions, continues to beat over 90 per minute. Other qualities of the pulse—as to regularity, intermissions, strength, etc.—must be carefully stated. Then, again, the relation between the pulse and respiration gives highly important information. This, in a healthy subject, may be estimated at about 1 respiration to every 4 beats of the pulse. As death from

disease of the respiratory organs forms so large a percentage in the list of mortality, it is impossible for the Examiner to be too careful, not only in estimating the constitutional tendencies already referred to, but in making his physical explorations of the chest. This should always be very lightly covered, so that by applying the hands to its surface you may observe whether the expansion is free, full and alike on both sides. Carefully remark the spaces below the clavicles—whether they are depressed, and either dull or flat on percussion. Note the breathing *there*; the respiratory murmur should be clear, soft, regular, and only heard on inspiration. If it is heard on expiration, and has a wavy, jerking or irregular sound, and if accompanied with a click, rattle or râle, you will probably find some cough, hæmoptysis, expectoration, and other indications of “consumption.” If the party is thin, has feeble digestion and irregular bowels, is easily affected by atmospheric changes, producing cough and catarrhal affections of the mucous passages, especially chronic disease of the throat with huskiness of voice—when these symptoms coexist with a quick or chorde pulse, look well to the family history and the condition of the lungs. Remember such predisposed people think and speak lightly of their symptoms, and are often very ready with explanations of them; but if *such indications exist, EVEN IN A REMOTE DEGREE*, you must be exceedingly cautious in recommending risks. Another condition to be specially observed is an unusually sonorous resonance on percussion over the whole or a large portion of the thorax. This is usually accompanied with an altered respiratory murmur, and, if attended with difficulty of breathing, indicates that the air cells are dilated, and the party has asthma.

The organs of circulation next command careful attention. Mark whether the heart occupies its normal position—if its apex beats about one inch below and to the left of the left nipple. Observe whether there is any intermission or irregularity in the beat; whether gentle or violent, and whether the impulse against the chest is coincident with the first sound. Carefully listen for any *bruit*, rough sound or bellows murmur, which indicate that the valves of the heart have been injured by disease, and are thereby obstructed. These altered sounds of the heart you will particularly look for after severe or repeated attacks of rheumatism before the age of 30. When existing for any length of time, hypertrophy of the muscular walls of the organ will have taken place, to compensate for the increased difficulty in driving forward the obstructed or regurgitative column of blood. Aneurisms or other tumors, if existing, and sufficiently advanced, will manifest themselves by such disturbance of the organs of respiration and circulation as scarcely to fail in challenging immediate attention.

The condition of the urinary organs is very apt to escape inquiry. Long standing strictures, calculi, and enlargement of the prostate gland seriously compromise the functions and structure of the bladder, which in turn lead to fatal disorganization of the kidneys. Disease of the latter organs is a frequent direct or remote cause of death. When there has been persistent pain in the back, accompanied with a puffy or slightly œdematous condition of the face, it is always well to make some examination of the urine. It will be sufficient to take the specific gravity with an ordinary urinometer. By comparing the number on the stem to which the instrument sinks, with the corresponding number in the annexed table, you will see at a glance how far the specimen varies from a healthy or safe standard.

SP. GR.	FLUIDS EXAMINED.
1000	DISTILLED WATER.
1005 } 1010 } 1015 }	Average in Bright's disease 1013 May go as low as 1004
1020 } 1025 }	Average limits of healthy urine.
1030 } 1035 } 1040 } 1045 } 1050 } 1055 } 1060 }	Limits of Diabetic Urine. Average 1040

If after boiling in a test tube the urine becomes turbid, and does not clear up on the addition of a few drops of nitric acid, while the specific gravity comes within the limits of Bright's disease, the case should be rejected.

The state of the brain, nervous and muscular systems may be ascertained by noting the general appearance and expression of the face, manner of speech, the gait in walking, or the want of control over any particular set of muscles, exhibited by tremors or irregular movements. Affections of one or more of the special senses—sight, hearing, taste, smell and feeling—attended with dizziness and confusion of mind, especially when following accidents, are the forerunners of insidious and fatal diseases of the brain. It is always important to inquire into the character of any severe injury or attack of illness, with a view to discover any effects upon the organs involved, the general health and prospect of life.

The functions of digestion and nutrition should be thoroughly examined to discover any indications of latent disease. Note the presence of hemorrhoids, tumors, fistulæ, and if there is hernia or rupture which is reducible, insist on the constant use of a proper truss.

The habits of the party as to the use of alcoholic stimulants, tobacco and opium, should never be neglected; and although the personal appearances, on examination, may furnish the best testimony, indirect evidence on these important points should be sought from friends or acquaintances.

Observe that the results of your investigation accord with the statements made in the application of the party examined, and then let the party sign his or her name to insure their identity.

From these general instructions we may condense the following

CAUSES OF REJECTION :

1st. When both parents have died of pulmonary consumption.

2d. When one parent and one or more offspring have died of the disease, unless the applicant has attained the age of 35 years, and exhibits a robust condition, entirely free from all discoverable indications of disease.

3d. Intermissions and irregularities in the action of the heart, abnormal sounds or symptoms of hypertrophy, aneurism, ossification of the blood vessels, habitual cough, difficulty of breathing and asthma.

4th. If the pulse is above 90, after due rest and repeated trials.

5th. When the applicant has been affected with apoplexy, paralysis, epilepsy, insanity, impairment of the senses and voluntary motion, a shuffling and uncertain gait, rapid tendency to obesity, with other symptoms indicating softening of the brain.

6th. Serious or protracted diseases of the liver and digestive organs, impairing the general health.

7th. Destructive diseases of the bones of the spine, hip, knee or other large joints, with abscesses, lumbar or psoas abscesses, unless a long period of entire and satisfactory cure has elapsed.

8th. The existence of open ulcers, scrofula, frequent attacks of erysipelas or colic, gout, fistulas in ano or perineo, irreducible hernias, and important tumors.

9th. Diseases of the kidneys, bladder, gravel, calculi, secondary syphilis, blindness, permanent strictures, and amputation above the knee or elbow joints for disease.

10th. All cancerous or malignant diseases—even when doubtful or suspicious—including those of the stomach, intestinal canal and rectum.

11th. All cases where, after any illness or injury, its effects are perceptible in permanent loss of vigor in the constitution.

12th. Whenever the Medical Examiner has a well-founded doubt, or has good reason to suspect the truthfulness or honesty of the applicant, it is his duty to decline the risk.

The Company desires only such risks as are in good, sound health. No impaired risks accepted under any circumstances.

A party in perfect health, but with an objectionable family record, may be recommended by the Examining Physician for an Endowment Policy having as many years to run as he may think the risk is assurable for.

But no risk to be taken for the whole term of life—whether ordinary Life or Life in one, five, ten, fifteen or twenty payments—unless he or she is judged to have an equal chance with all others of the same age of living out the full Expectation according to that age.

Of course, any person with a hereditary predisposition cannot be judged to have as fair a chance to live out the Expectation as one with a good family record.

"A STEP IN ADVANCE!"

In the determination of the presence of disease, no medical practitioner of the present day who values his standing, can afford to dispense with the use of the thermometer. Throughout the world, all high professional authority in dealing with the professedly sick, thoroughly appreciate and confidently invoke the aid of this simple instrument. Why, then, should it be ignored and neglected in life insurance examinations, upon the results of which depend the making of contracts involving thousands upon thousands of dollars.

Many an applicant may be laboring under the slow and stealthy effects of disease, yet scarcely conscious or even suspicious of the fact, simply because

the bodily disturbances have not yet declared themselves by such symptoms or physical signs as are readily recognized.

It is important, then, for the practitioner who would shun the same sources of deception and delusion, to know that any departure from the normal temperature (98° to 99° Fahrenheit) of only a few degrees, which recurs daily or after moderate exercise, and does not readily subside, should awake sufficient suspicion to induce a repetition of the observation, and, if the abnormal temperature is found persistent, to make it the subject of special report.

In this connection, it is important to be aware that by far the largest percentage of premature losses are resultant from pulmonary and allied forms of disease, due to the "tubercular" and other well-known constitutional tendencies, either hereditary or acquired. We cannot, therefore, too seriously ponder the practical teaching of Prof. Sidney Ringer, when he says, "that by means of the thermometer we can diagnose tuberculosis and tuberculization *long before* the physical signs and symptoms are sufficient to justify such diagnosis."

This statement is equally reasonable and correct in regard to many other insidious morbid states, not as matters of opinion or theory, but of experimental observation; so that we may lay it down as positive, that no serious perversion of the physiological processes of the body can be progressively going forward without indicating the fact by an unusual departure from the normal temperature; and, likewise, that the clinical thermometer properly employed will unerringly reveal this information.

For these cogent reasons (to which many others might be added) the study and employment of this instrument is earnestly and confidently urged upon the medical examiners of the Brooklyn Life, as an invaluable assistant in estimating those bodily conditions which lead up to the premature and extra vital limitations of those upon whom you may be required to furnish an opinion. It shields the Examiner from serious and often fatal error, by assisting his judgment with positive information instead of mere opinion, and thus appeals directly to his own personal interest by establishing his professional capacity. To a physician, a good thermometer is of infinitely more value than a watch. To persistently dispense with its use under the light of present indisputable evidence in its favor, is about equivalent to the practice blindfolded of a profession which demands all the assistance which art and intelligence can furnish.

CONNECTICUT GENERAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO THE MEDICAL EXAMINER.

1. In accepting the appointment of Medical Examiner for the Company, the physician should *realize* that he thereby becomes an employee of the Company. To the Company alone is he responsible, and in making his examinations, regard should be had, *alone*, to the interests of the Company. He is paid the same fee, whether a favorable or an unfavorable report is made, and he will be continued in his position if he is skilled in his profession, and is careful and conscientious in his examinations.

And we wish to impress upon the Examiner the *necessity*, not only that he should use his utmost skill and most careful judgment in the examination, but also that he should exercise the most *perfect independence* in his statement of facts and expression of opinion. His integrity must be above reproach, and no outside influence whatever should be allowed to sway him. All the facts should be carefully reported, and his decision given with the whole case fairly in mind, considering the family history, present condition, location, habits, etc., of the applicant. It will be well, however, for the Examiner to remember that the applicant for insurance usually regards himself as occupying a very different position from that of an ordinary patient. In the latter, he is often disposed to magnify his infirmities, while in the former he is likely to conceal them as far as he can, and their discovery may require special vigilance on the part of the Examiner.

2. Many Examiners feel their whole duty to the Company has been performed, when they have thoroughly examined into the *present personal condition* of an applicant. This is an error, and the Examiner should bear in mind that there are in every case three very important general points to be considered :—

1. FAMILY HISTORY.

2. PERSONAL HISTORY.

3. PRESENT PERSONAL CONDITION.

As full and specific information relative to each of these points, as is possible to obtain, should always be furnished.

3. An EXAMINATION should not be made in any place, where, from noise or confusion, the sounds of the heart and respiratory murmur of the lungs cannot be clearly and distinctly heard : nor should it ever be made hurriedly, or when from any cause, the Examiner cannot carry it through leisurely and composedly. It will be better to postpone the examination rather than make an imperfect and unsatisfactory one.

4. The APPLICATION of the person to be examined, *fully completed*, should always be in the hands of the Examiner, and *carefully read*, BEFORE the examination is made. If anything of past or present disease is noticed, special attention should be given to it, and thorough investigation made. If there appears

to be anything of an hereditary nature in the family history, the Examiner should particularly and thoroughly inquire into it, even though the applicant himself may present no indications of the same. The inquiries should be extended to both branches of the applicant's family; and all general and indefinite statements regarding deaths should be explained, as "childbirth," "effects of childbirth," "change of life," "accident," "debility," "old age," etc.

If ignorance of family history is pleaded, some proximate idea of the causes of death should be *gleaned* by the Examiner and stated *as such*.

An experience of many years leads us to place much value upon the family record. It is, we think, of more importance than is usually attached to it by Examiners, many of whom, we know, have no hesitation in recommending for insurance those who have had parents and other relatives die from consumption or allied diseases. Yet with all our precautions, we find our largest mortality in diseases of this character, and in these cases the present personal condition of the person to be insured seems to have wholly engrossed or overridden all other considerations, in the mind of the physician.

5. Every effort should be made by the Examiner to satisfactorily ascertain the personal habits of life of the applicant, both past and present. There is no greater foe to Life Insurance than intemperance, and the greatest care should be used in this regard to shield the Company from bad risks. No application should be recommended unless the applicant is of *STRICTLY* sober, temperate and correct habits. If he be what is generally termed "a high liver," or "social drinker," or if the use of intoxicating liquors has become *habitual*, although he may never have been intoxicated, yet the Company cannot regard such a party as a safe risk, and will not knowingly issue a Policy in such a case. Nor should offence be taken at this by any one, for life insurance is a business to be guarded like other business matters, and must be pursued under the ordinary well-established grounds of safety, if it is to be made successful.

6. If the applicant for insurance is a female, the Examiner should not only make as thorough personal examination as the circumstances will admit, but should possess himself, if necessary, through her usual medical attendant, of any and all facts relative to diseases, or symptoms of disease, she may have had peculiar to her sex. In all cases where pregnancy exists, the application should be declined until after recovery from confinement; and great care should be exercised in recommending females between the ages of forty and fifty, or until the "change of life" is fully passed.

7. If the applicant for insurance is an aged person of sixty years or more, the Examiner should direct his attention particularly to the constitutional diseases of age, remembering that at this period of life there is an increased tendency to urinary diseases, to fatty degenerations, cardiac, and other obstructions from undue deposits, and general failure of the vital forces, with paralysis and the like. Especial vigilance should be exercised to detect incipient signs of any of these, and unless the applicant is an especially good risk, with an unexceptionable family record, and vigorous physique, the application should be declined.

8. If the applicant be of excessive weight (or the reverse), or out of the usual proportion in any way, as, larger around the waist than chest (a fact which may be due to accumulation of fat, or development of muscle, and which in one case may depreciate, and in the other improve the risk), full explanations

should be furnished. If unusually spare for his height, stoop-shouldered, or possessed of any peculiarity, physical or otherwise, which may have a bearing on the risk, it should be stated fully.

9. It is not possible within our limits, nor is it thought necessary, to notice specially every point connected with making examinations. If well qualified, the necessary inquiries will occur to the Examiner, and if he, in any just degree, realizes the vast importance to the Company of his report, and the responsibility he assumes in his recommendation, we are sure that neither will be given without the most careful and thorough investigation.

The sound common sense of the medical man is especially necessary, and the prime qualification of the Examiner. If there is doubt in any case, the benefit of the doubt should always be given to the Company. We are not so anxious to do business as to be willing to accept any doubtful or uncertain risk.

10. Whenever there is necessity, or for any reason he prefers, the Examiner is *requested* to communicate directly with the Home Office. We desire he should do so freely, at all times when it seems to him best, and his communications will always be regarded as confidential.

11. If a policy has not been taken in proper time, or has lapsed, and a reëxamination is ordered by the Company, the Examiner should *personally* examine the party *with the same care and minuteness* as when first examined, so as to be able to make a certificate in the following form:—

I have made careful personal examination of.....
of.....and hereby certify that he is in sound health, and
that no change has occurred in his personal or family history or in his personal habits,
since his former application and examination of..... 18...

Except.....

[Signed.]M. D.

CONNECTICUT MUTUAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

Family History.—Where ages, causes of death, etc., are unknown, or very uncertain, require the applicant to ascertain them for you, or, if this appears impracticable, endeavor at least to establish the general hereditary tendencies and longevity of the family, and that deaths were *not* caused by any transmissible disease, as consumption, insanity, paralysis, apoplexy, or heart disease.

Personal History and Examination.—Ascertain and state whether his various ailments, injuries, etc., have been trivial or severe, and whether they have left any injurious effect. To the questions regarding vaccination, rupture, tumors, deformity, malformation, and injury, your reply, after careful *inspection*, is desired.

Special attention is directed to the necessity of a very thorough and critical exploration of the chest for the detection of incipient disease. Never be satisfied simply with the absence of abnormal conditions, as râles and murmurs, but be equally positive of the presence of the normal.

The Applicant's Habits regarding the use of alcoholic stimulants, opium, and tobacco should be definitely ascertained, and in stating them in your Report avoid the use of such words as "moderate," "occasional," and "temperate." Where their daily or frequent use is suspected assure yourself that the stomach, liver, kidneys, and nervous system are free from any evidence of injury.

Urinalysis is always required and, for the aid of any who may desire it, brief rules are given below. Various tests, aside from those detailed below, are considered trustworthy, but the ones mentioned are easily applied and sufficiently accurate. If others are used, state in your Report *what* test was employed.

The Microscope should always be used when, in a case *otherwise acceptable*, there is a suspicion of disease requiring its aid for assurance, as where there is a history of calculus, or cystitis.

It may occasionally occur that the information elicited will be of such a character that the Examiner will hesitate to place it upon the Report as fully as is desirable. In these cases we invite correspondence with the consulting physician at the Home Office, where all such communications are held strictly confidential; and in any case where the applicant requests it, or the Examiner deems it advisable, the Report may be sealed in envelopes supplied for that purpose before being delivered to the Agent for transmission to us.

BRIEF RULES FOR URINALYSIS.

Be sure that the urine is that of the applicant and examine it within 24 hours after it is voided. After noting the color, reaction, and specific gravity, fill a *clean* test-tube half full of the clear urine (previously filtered if turbid), and

holding it at an angle of 45 degrees, allow nitric acid to trickle gently down its side and form a stratum, under the urine, at the bottom of the tube. If carefully done the two fluids will not mingle. Should any hazy or whitish cloud be observed at the point where the urine and acid meet, apply heat, and if the cloud remains, albumin may be considered present.

Note.—Urine containing resinous matters, as when a patient is taking turpentine, balsam copaiva, etc., will sometimes give a whitish-yellow cloudiness, similar to albumin, with nitric and hydrochloric acids. The addition of alcohol will cause this to disappear at once.

It is important to hold the test-tube in a proper light in order to distinguish slight changes, where only a small amount of albumin is present. The best way is that advised by Dr. John Munn, viz.: Place some dark material over the lower part of the window, as a background, and draw the shade down to it. Now, holding the test-tube a little way from this background, lift the shade forward, enough to allow the rays of light to pass through the tube without shining into your eyes. In such a light, and against the dark background, very slight opacity becomes visible.

To detect sugar: fill a clean test-tube to the depth of half an inch with Fehling's standard test solution and boil it. If it is *pure* and *reliable* it will remain clear and of a dark blue color. While the clear solution is hot, add the urine, a few drops at a time. Sugar will cause a deep yellow or orange colored precipitate before the amount of urine added *equals the quantity of test solution employed*. If there is no change, once more heat to boiling and stand it one side. When cool, if there is no change sugar may be considered absent. Squibb's Fehling's Test Solution is reliable and can be obtained through any druggist.

When the specific gravity is above or below normal, or albumin or sugar are present in very small quantity, it will be well to collect the total secretion of 24 hours and examine a sample of this mixed urine.

TABLE EXHIBITING THE HEALTHFUL AVERAGE RELATION BETWEEN
HEIGHT AND WEIGHT.

HEIGHT.	WEIGHT.	LIMIT.	
		Under.	Over.
5 ft. 1 in.	120 lbs.	96 lbs.	144 lbs.
5 ft. 2 in.	125 lbs.	100 lbs.	150 lbs.
5 ft. 3 in.	130 lbs.	104 lbs.	156 lbs.
5 ft. 4 in.	135 lbs.	108 lbs.	162 lbs.
5 ft. 5 in.	140 lbs.	112 lbs.	168 lbs.
5 ft. 6 in.	143 lbs.	114 lbs.	172 lbs.
5 ft. 7 in.	145 lbs.	116 lbs.	174 lbs.
5 ft. 8 in.	148 lbs.	119 lbs.	177 lbs.
5 ft. 9 in.	155 lbs.	124 lbs.	186 lbs.
5 ft. 10 in.	160 lbs.	128 lbs.	192 lbs.
5 ft. 11 in.	165 lbs.	132 lbs.	198 lbs.
6 ft.	170 lbs.	136 lbs.	204 lbs.

THE EQUITABLE LIFE ASSURANCE SOCIETY OF THE UNITED STATES.

INSTRUCTIONS TO MEDICAL EXAMINERS.

I. OF THE MEDICAL EXAMINER.

The Medical Examiners of this Society are officers regularly commissioned in the Society's service. They are *selected and appointed* exclusively by the Society's Medical Department through its own channels. *Agents have no concern whatever in the premises—neither in the procuring of appointments, nor even in the making of original nominations for vacant examinerships, except by courtesy.* Examiners will, therefore, understand that they hold office from the Medical, and not from the Agency Department of the Society, and that they are, consequently, responsible to the Medical Department only. Agents are not authorized to direct Examiners concerning their duties.

Examiners are *commissioned* to hold office during the pleasure of the Society's Medical Directors for the time being. After appointment, they are not removed except for cause, but they may be subject to retirement after attainment of the age of sixty-five years.

Commissions are valid only for the place of residence of the Examiner at the time of appointment. Subsequent removal of residence to another locality renders a commission void.

For small settlements, a single Examiner only is commonly appointed, such Examiner then having the privilege of all medical examinations for the Society, required at his place of residence, no matter by what agent or broker applications may be secured. For towns or cities of a considerable size, in addition to the ordinary Examiner, one, or, if need be, two *alternate* or *extraordinary* Examiners are commissioned to serve, in association with the ordinary Examiner, for cases requiring two medical reports, or for the making of single examinations when, for any reason, the services of the ordinary Examiner for the place may not be available in season.

Qualification for Medical Examinership is constituted by the possession of adequate professional skill and experience, good judgment, integrity, independence, respectability and a courteous readiness to respond promptly to calls for the making of examinations. This last mentioned item is important for the reason that unless candidates for assurance are examined very shortly after the making of application, the business may be lost through a subsequent change of mind. What is *not* required of an Examiner (although, of course, gratifying when willingly done) is either to insure his own life in the Society, or to actively influence others so to do. Open disparagement of the Society, however, is held to disqualify.

Compensation for services as Medical Examiner is ordinarily by a fixed fee for each examination made and reported, no matter whether the risk be approved or condemned. Such examination includes the testing of the urine

for specific gravity, reaction and possible presence of albumin or of sugar. Traveling expenses of Medical Examiners are not chargeable to the Society, but must be the subject of private arrangement between Examiner and Agent.

II. OF THE MEDICAL EXAMINATION.

Although the point is obvious, it is well for completeness' sake to remind the Examiner that he should refuse service in any case where an adverse result would be of concern to himself. He should, therefore, not consent to examine an intimate friend or a near relative, if there be any other competent physician available for the case, and should, of course, under no circumstances, act as Examiner for a proposed assurance of which he is to be himself, either in whole or in part, the beneficiary. Also, it is hardly necessary to add, an Examiner should never accept any share of an agent's commission or any other consideration of value on a case of his own examining.

In proceeding to his duty, the Examiner should bear in mind the grave responsibility of his office and the peculiar conditions that attend a medical examination for life assurance. In the case of an examination of a *patient* for the sake of indications for treatment, one visit can ordinarily be supplemented by others, and, in obscure cases, judgment be reserved; but in the examination for *life assurance* a single interview is, commonly, all that is accorded, and yet upon the results of the same an immediate and definite opinion must be rendered. Furthermore, in the case of an examination as a preliminary for therapeutics, the outcome—a policy of treatment—is one designed at most but for temporary continuance, and is one which is at the same time subject to withdrawal or variation at will; but in the case of an examination as a preliminary for assurance, the outcome is a policy whose contract must endure for life, and that, too, with terms unchanged and unchangeable from issue to maturity. For these reasons an examination for life assurance should be punctiliously thorough, no matter how healthy the subject may appear, and the Examiner's recommendation in the case should be rendered only after most careful and conscientious consideration.

The examination should be so conducted as to satisfy in full the requirements of the Society's blank form for the examination-report, and the report should be made upon one of such forms. It is the business of the solicitor who presents the subject for examination to provide the Examiner with a report blank.

All questions put by the blank should be answered, but the Examiner is not expected necessarily to use the phraseology of the blank in making his inquiries of the candidate.

Upon the Society's blank form for use in the United States appear the following practical "Instructions to Medical Examiners," which are here reprinted for general information:—

"INSTRUCTIONS TO MEDICAL EXAMINERS.—I. Conduct your *examination* in private, and not in the presence of agents or others; and insist on being accorded the *time* and *quietness of place* necessary for thorough examining.

"II. Make your *report full* and *precise*. Such report has to serve the Medical Directors at the Home Office as a basis for a professional judgment on the risk.

" III. In the matter of the *family history*, seek always, as regards causes of death, to elicit the specific disease, especially where there may be a suspicion of consumption. Such suspicion always attaches in case of death ascribed to 'exposure,' 'general debility,' 'childbirth,' 'change of life,' 'effects of cold,' 'liver complaint,' 'fever,' etc., so that in such cases the report should, if possible, state explicitly that phthisis was or was not an element of the fatal illness.

" IV. In the matter of *personal history*, ask specifically the questions necessary to cover the points of inquiry called for by the blank. And do not accept for reply any general negative, such as, 'Oh, I have never been sick.' Many occurrences bearing on assurability, but which yet do not constitute illness, such as an hæmoptysis, an otorrhœa, a fistula, or a stricture, are often forgotten by candidates until specifically inquired about.

" V. In the matter of *physical examination*, make the same thorough, no matter how sound the candidate may appear, nor how well you may know him. For the practice of auscultation, in the male subject, the coat and vest should be taken off, and the linen shirt rolled up from below out of the way; and, in the female, the waist of the dress and the corsets should be removed. Other physical explorations and the necessary disrobing for the same will be at your discretion, according to the circumstances of the case.

" VI. In the matter of *the testing of the urine*, so apply your tests as to detect the presence of even small amounts of albumin or of sugar. For such detection of albumin, the common heat-and-nitric-acid test is efficient enough if applied in the following manner: First acidify with a drop or two of acetic acid, then fill a long test-tube three-quarters full, and, holding the same by the bottom, boil the *upper* portion, only, of its contents. Holding the tube now a few inches in front of a black background set before a window, compare the upper, boiled, stratum of fluid with the lower, unboiled, one, and any pathologically important amount of albumin will be shown by a distinct cloudiness of the upper stratum of urine, distinguishable from the cloudiness of precipitated phosphates by its persistence after addition of a drop of nitric acid. As regards sugar, test for this constituent in all cases, regardless of specific gravity. In the beginnings of diabetes, as in temporary glycosuria, the amount of glucose in the urine is commonly not enough to run the specific gravity out of bounds. Take by preference, furthermore, the urine secreted during active digestion, since in the beginnings of both albuminuria and glycosuria the morbid constituents may be present during digestion while absent in the intervals.

" VII. In the matter of *habitual indulgence in alcoholics*, report specifically *what* the candidate drinks and *how much*. Such phrases as 'temperate,' 'drinks when he wants to,' give no information, and are worthless for the purpose of the report. In reporting 'over-indulgence,' draw the line—since there must be some one fixed standard—at Anstie's limit of a daily allowance equivalent to one and a half ounces of absolute alcohol. Such allowance will be represented in the case of ardent spirits by three ounces; of sherry or other strong wine, by two wineglassfuls; of claret, champagne, or other light wine, by one 'pint' bottle; of strong ale or porter, by three tumblerfuls; and of light ale or beer, by four or five tumblerfuls. In cases of excess of any of these amounts, therefore, answer carefully the accessory questions required by the blank.

"VIII. In any *matter of delicacy* affecting the risk, you have the privilege of writing, under seal, direct to the Medical Directors, at the Home Office (120 Broadway, New York).^{*} Such communications are solicited and will be held in strict confidence.

"IX. In forming your *opinion* of the life as an assurance risk, remember that the question is not merely the narrow one of whether or not the candidate is, at the moment, healthy and sound, but is the broader subject of his *chances of living*—chances that may be affected as much by abode, occupation, habits of life and hereditary tendencies as by present condition of health. A wise judgment, therefore, requires the weighing of all the influences now or prospectively affecting the life.

"X. If so requested by the candidate, for the purpose of holding private his medical history, you are authorized to deliver to the agent your report *sealed*.

"XI. In the event of your giving an *adverse opinion* upon a risk, or of your *declining to examine* a candidate because of foreknowledge of his ineligibility, you are particularly requested to communicate the fact confidentially to the undersigned,^{*} stating name, residence, and occupation of the objectionable candidate, date of your unfavorable action and reason for the same."

Besides the matter of the candidate's physical condition, the subject of the *sanitation of his "environment"* should receive careful consideration at the hands of the Examiner. For now that so many acute diseases are known to be due to preventable causes, life assurance companies feel that they have a right to such protection from risk of early death from "zymotic" disease as may be afforded by intelligent inquiry into the sanitary condition of a candidate's work and living rooms. Of course—desirable though it would be—it is not expected that the Examiner will, in every instance, visit and critically inspect both the home and the office or workshop of his subject, but it *is* asked that he will make a pointed inquiry into the conditions of the environment, and, if a suspicion of serious fault of sanitation appear, refuse to report the risk until, in some way, the facts in the case can be authoritatively determined. Analogous research should also, so far as practicable, be made into the matter of the mode of life and moral surroundings of the subject, since many a life, without flaw so far as physique is concerned, may yet prove a very bad risk, indeed, because of moral hazard.

III. OF THE RATING OF THE RISK.

Many of the circumstances affecting life assurability are so clear cut in their influence that comment is unnecessary, but others either affect assurability variously under varying conditions, or are held in various degrees of esteem by insurance authorities. The following schedule exhibits the theory and practice of the home Medical Directors of the Equitable Society in regard to the more prominent of the circumstances of the latter-named categories. It is to be understood, however, that while degrees and periods of disqualification are ordinarily as stated, such statements do not constitute inviolable rules, but the Medical Directors reserve the privilege of recommending at will the acceptance or rejection of any given proposal. For convenience of reference, items are listed alphabetically by title of subject.

^{*} Or, in foreign countries, to the Medical Director at the Branch Office.

Albuminuria.—*Persistent* albuminuria, whether continuous, cyclical, or irregularly intermittent, and whether or not accompanied by other derangement of the urine, or by derangement of health of the subject, *disqualifies during continuance*, and also for a period after apparent final disappearance, according to the individuality of the case. In the event of the finding of a small amount of albumin in an otherwise normal urine from an apparently healthy subject not past middle life, the Examiner should apply the microscope, and should also make a sufficient number of supplementary testings on other occasions to establish whether the condition be transient or persistent.

Amputation.—Amputation of a lower extremity above the knee imposes an addition to the premium rate equal to $\frac{1}{4}$ per cent. of the amount of the assurance. Other single amputations are not regarded. Double amputation of either set of limbs above the wrist or ankle, respectively, disqualifies.

Apoplexy.—Any history of a distinct, idiopathic apoplectic seizure apparently due to an organic cerebral affection ordinarily disqualifies permanently.

Asthma.—Asthma manifests itself so variously that cases have to be judged on their individual merits.

Blindness.—Blindness of both eyes imposes an addition to the premium rate equal to $\frac{1}{2}$ per cent. of the amount of the assurance. Blindness of one eye is not regarded.

Bronchitis, of any grade, disqualifies during continuance. Chronic bronchitis and frequently recurring attacks of acute bronchitis disqualify permanently.

Calculus.—Passage of a calculus (whether urinary or biliary) disqualifies for a minimum term of five years after occurrence. A frequency of recurrence sufficient seemingly to portend a distinct predisposition to the formation of calculi (urinary or biliary) disqualifies permanently.

Cancer, in the Subject.—Any history of a cancer of any variety permanently disqualifies.

Cancer, in the Family Record, is not regarded unless there be several cases in the immediate family, or an unbroken succession of several in the immediate ancestry. Cancers of the uterus, of the mamma and of the skin are regarded as of least import in establishing a cachexia possibly transmissible by inheritance.

Caries, if of any extent, disqualifies during continuance.

Chancre.—See *Syphilis*.

Chancroid disqualifies for a term of six months after initial appearance (this to protect against possible errors of diagnosis).

Colic, Hepatic.—See *Calculus*.

Colic, Intestinal.—Frequent recurrence of severe intestinal colic disqualifies during the continuance of the habit.

Consolidation of Lung, if considerable, disqualifies.

Consumption, in the Subject.—Any history of undoubted phthisis pulmonalis in the past, even if recovery has been complete, ordinarily disqualifies.

Consumption, in the Family Record.—It is regarded as fairly demonstrated, *first*, that consumption is, *proportionately*, as common at one age as at another; *secondly*, that as between thin and stout subjects, the thin are *very* much more obnoxious to the disease than the stout; *thirdly*, that among family stocks, special family susceptibility, of varying degrees, may often be traced; and,

fourthly, that the immediate determining cause of a given case of phthisis may often be direct contagion. With these points in mind, it is held that the bearing of a consumptive family record on a given risk cannot be gauged by the considerations alone of present age of the candidate, number of consumptive dead in the family, and ages at death of the several decedents. Hence, in the practice of the Equitable Society, no set rules are followed for postponement or rejection of candidates with a family record of phthisis, but each case is judged on its individual merits, with, in general, the attaching of more weight to the consideration of the present *physique* of the candidate, than to that of his present *age*, or than to that of the number of consumptive relatives dead. In view of the many-sidedness of the subject, therefore, Examiners are earnestly requested to inquire as fully as possible into the probable causation of all cases of death from phthisis encountered in a family record, and to record the results in the examination reports.

Curvature of Spine.—*Antero-posterior* curvature of the spine either disqualifies permanently, or limits to endowment assurance, terminating at an age not exceeding fifty years.

Lateral curvature of the spine, unless quite considerable, is not regarded.

Deafness.—Total or practically total deafness imposes an addition to the premium rate equal to $\frac{1}{2}$ per cent. of the amount of the assurance. Loss of hearing in one ear only is not regarded.

Delirium Tremens.—Any history of delirium tremens, whether recent or in the far past, ordinarily disqualifies permanently.

Emphysema of Lungs, if considerable, ordinarily disqualifies permanently.

Epilepsy.—Confirmed epilepsy, of course, disqualifies permanently. A history of recurring epileptiform fits in the past disqualifies variously, according to case.

Family History.—See under the several titles of the diseases concerned.

Fistula-in-ano disqualifies during continuance, and for the term of one year after cure.

Gout.—Confirmed gouty diathesis either disqualifies permanently or limits to short endowment, according to case.

Hemorrhage from the Respiratory Tract (excepting, of course, an epistaxis) ordinarily disqualifies for a minimum term of ten years after occurrence. Recurring attacks disqualify for long periods or permanently, according to case. (The Examiner should remember the common practice of the medical adviser in reassuring sufferers from this affection at the time of their seizure. Hence insurance candidates are almost certain, in all innocence, to describe their past attack or attacks as trivial, and to fix the site of the hemorrhage in the "throat.")

Heart Lesions.—Any chronic organic affection of the heart—enlargement, permanent dilatation, valvular insufficiency or stenosis, probable fatty degeneration or pericardial adhesion—disqualifies, without exception, permanently.

Heart Murmurs.—All undoubtedly *abnormal* heart murmurs, whether adjudged of organic or of functional causation, disqualify during continuance.

Hemiplegia.—See *Paralysis*.

Hernia.—Irreducible hernia disqualifies permanently. Reducible hernia, whether of one or of both sides, imposes only a special clause in the policy

contract, reading as follows: "Provided always that death, in consequence of not wearing a truss, is not assured against."

Humpback.—See *Curvature of Spine*.

Intemperance.—Present habit, of course, disqualifies. Past habit disqualifies for a term after discontinuance, according to case—and the longer the reformation the longer the term. Any commonly recurring excess over Anstie's limit of daily indulgence (see ante) is regarded, so far as concerns the purport of this paragraph, as "intemperance."

Necrosis.—Any considerable necrosis disqualifies during continuance.

Occupation.—*Occupations involving special risk from accident* impose additions to the premium rate, ranging from $\frac{1}{4}$ per cent. to 2 per cent. of the amount of the assurance, according to case. Prominent examples of such occupations are *mining, seafaring, and "railroading"* (locomotive engineer, railroad conductor, train-hand, switchman, coupler of cars), etc.

Occupations involving the sale of alcoholic beverages of any kind, where the business is *strictly wholesale*, impose an addition to the premium rate equal to $\frac{1}{2}$ per cent. of the amount of the assurance.

The following occupations disqualify absolutely: selling or personally dispensing alcoholic beverages at retail; gambling, pool selling and "book making."

Otorrhœa.—Simple purulent otorrhœa, if intermittent and trivial only, is not regarded; but if considerable, or, even when slight, if persistent, it imposes an addition to the premium rate equal to $\frac{1}{2}$ per cent. of the amount of the assurance.

Persistent otorrhœa, where the secretion is greenish in color or offensive in odor, or where there is a history of the occasional discharge of blood, of gritty matter or of spiculæ of bone, disqualifies during continuance and for a minimum term of one year after apparent final disappearance. In all cases of otorrhœa, therefore, the Examiner should make the necessary investigation to cover the foregoing points and should recite the result in his report.

Paralysis, Facial.—Ordinary so-called "Bell's paralysis," of undoubted peripheral causation, is not regarded.

Paralysis, Hemiplegia.—Any history of an undoubted idiopathic hemiplegic seizure ordinarily disqualifies permanently.

Paralysis, Paraplegic, disqualifies during continuance, and otherwise according to case.

Pleurisy, recurring, disqualifies according to case.

Pleuritic Adhesions, if permanent and considerable, ordinarily disqualify permanently.

Pregnancy is not regarded unless there be special reasons for apprehension, individual to the case.

Prostate.—Confirmed enlargement of the prostate disqualifies permanently.

Pulse.—Confirmed *over-rapidity* (over ninety beats per minute), *under-rapidity* (under fifty beats per minute) of the pulse rate, or systematic irregularity of the pulse, ordinarily disqualifies during continuance. Simple *intermittence* of the pulse in subjects not past middle life, if not excessive and if constitutional to the individual, is not regarded.

Race.—Negroes, whether of pure or of mixed blood, who reside outside of the

tropics, are charged an addition to the premium rate equal to $\frac{1}{2}$ per cent. of the amount of the assurance.

Rheumatism.—An attack of acute articular rheumatism disqualifies for one year after beginning of convalescence. Recurring attacks may disqualify permanently. Chronic rheumatism disqualifies variously according to case.

Sarcoma disqualifies like *cancer* (which see).

Sex.—Women are charged an addition to the premium rate equal to $\frac{1}{2}$ per cent. of the amount of the assurance, until after the attainment of the age of forty-eight years.

Stone in the Bladder disqualifies during presence.

Stricture of the Urethra (organic) ordinarily disqualifies during continuance.

Sugar in the Urine, if associated with the rational signs of diabetes, ordinarily disqualifies permanently. If not so associated, but if yet the sugar be fairly abundant in amount, the condition disqualifies during continuance, and for a term after apparent final disappearance, according to the case. *A trace only of sugar found in a urine of normal specific gravity from a seemingly healthy subject*, and demonstrated by an appropriately timed series of testings to be temporarily present only, and that, too, during the high tide of digestion of a meal including starch or sugar, is not regarded.

Sunstroke disqualifies for a term, according to the case. Recurring attacks may disqualify permanently.

Syphilis.—Primary syphilis, not followed by constitutional symptoms, disqualifies for a term of six months after initial appearance.

Secondary syphilis disqualifies, ordinarily, during continuance, and for a minimum term of three years after disappearance of the last manifestation.

Any history of tertiary or inherited syphilis ordinarily disqualifies permanently.

Tapeworm disqualifies during presence of the parasite, and for a term of six months after alleged discharge of the entire worm.

Ulcer.—Any considerable ulcer disqualifies during continuance.

Vaccination, Lack of.—Declaration of lack of even the customary vaccination of infancy, imposes a special clause in the policy contract, reading as follows: "Provided always that death by or in consequence of the smallpox is not a risk assumed by this Society unless after successful vaccination."

Weight.—Pronounced disproportion of weight in either direction disqualifies variously, according to case. Excessive disproportion may disqualify absolutely. Following is the commonly accepted standard table of proportionate weights:—

Height.	American Standard, Average Weight.	Height.	American Standard, Average Weight.
5 ft.	115	5 ft. 8 in.,	148
5 ft. 1 in.,	120	5 ft. 9 in.,	155
5 ft. 2 in.,	125	5 ft. 10 in.,	160
5 ft. 3 in.,	130	5 ft. 11 in.,	165
5 ft. 4 in.,	135	6 ft.	170
5 ft. 5 in.,	140	6 ft. 1 in.,	175
5 ft. 6 in.,	143	6 ft. 2 in.,	180
5 ft. 7 in.,	145		

For the effect on assurability of factors other than the above, the Examiner must be his own judge, and a point that merits mention in this connection is that of the *general impression* which the subject makes upon the professional eye of the Examiner, quite apart from the results of technical examination. If such impression be unfavorable, even though no definite physical flaw appear, it is the duty of the Examiner to respect his instinct and to decline the risk. Rejection in such cases is all the more imperative for the reason that, by the very nature of the consideration in question, the same is one that can only appear to the eye of the Examiner, who has the subject before him in the flesh—the Medical Director at the Company's office, with but a pen-and-ink exhibit by which to judge the risk, being, by that very circumstance, debarred from all possibility of forming an intelligent, independent opinion in the premises.

MORTALITY TABLE. ASSURED LIVES.

(American Table of Mortality adopted by the State of New York as the standard for the valuation of policies.)

COM- PLETED AGE.	NUMBER SURVIVING AT EACH AGE.	DEATHS IN EACH YEAR.	COM- PLETED AGE.	NUMBER SURVIVING AT EACH AGE.	DEATHS IN EACH YEAR.	COM- PLETED AGE.	NUMBER SURVIVING AT EACH AGE.	DEATHS IN EACH YEAR.
10	100,000	749	40	78,106	765	70	38,569	2,391
11	99,251	746	41	77,341	774	71	36,178	2,448
12	98,505	743	42	76,567	785	72	33,730	2,487
13	97,762	740	43	75,782	797	73	31,243	2,505
14	97,022	737	44	74,985	812	74	38,738	2,501
15	96,285	735	45	74,173	828	75	26,237	2,476
16	95,550	732	46	73,345	848	76	23,761	2,431
17	94,818	729	47	72,497	870	77	21,330	2,369
18	94,089	727	48	71,627	896	78	18,961	2,291
19	93,362	725	49	70,731	927	79	16,670	2,196
20	92,637	723	50	69,804	962	80	14,474	2,091
21	91,914	722	51	68,842	1,001	81	12,383	1,964
22	91,192	721	52	67,841	1,044	82	10,419	1,816
23	90,471	720	53	66,797	1,091	83	8,603	1,648
24	89,751	719	54	65,706	1,143	84	6,955	1,470
25	89,032	718	55	64,563	1,199	85	5,485	1,292
26	88,314	718	56	63,364	1,260	86	4,193	1,114
27	87,596	718	57	62,104	1,325	87	3,079	933
28	86,878	718	58	60,779	1,394	88	2,146	744
29	86,160	719	59	59,385	1,468	89	1,402	555
30	85,441	720	60	57,917	1,546	90	847	385
31	84,721	721	61	56,371	1,628	91	462	246
32	84,000	723	62	54,743	1,713	92	216	137
33	83,277	726	63	53,030	1,800	93	79	58
34	82,551	729	64	51,230	1,889	94	21	18
35	81,822	732	65	49,341	1,980	95	3	3
36	81,090	737	66	47,361	2,070			
37	80,353	742	67	45,291	2,158			
38	79,611	749	68	43,133	2,243			
39	78,862	756	69	40,890	2,321			

"EXPECTATION" TABLE. ASSURED LIVES.

(Constructed from the foregoing Mortality Table.)

YEARS OLD.	EXPECTATION.	YEARS OLD.	EXPECTATION.	YEARS OLD.	EXPECTATION.
	Years.		Years.		Years.
10	48.7	40	28.2	70	8.5
11	48.1	41	27.5	71	8.0
12	47.4	42	26.7	72	7.6
13	46.8	43	26.0	73	7.1
14	46.2	44	25.3	74	6.7
15	45.5	45	24.5	75	6.3
16	44.9	46	23.8	76	5.9
17	44.2	47	23.1	77	5.5
18	43.5	48	22.4	78	5.1
19	42.9	49	21.6	79	4.8
20	42.2	50	20.9	80	4.4
21	41.5	51	20.2	81	4.1
22	40.9	52	19.5	82	3.7
23	40.2	53	18.8	83	3.4
24	39.5	54	18.1	84	3.1
25	38.8	55	17.4	85	2.8
26	38.1	56	16.7	86	2.5
27	37.4	57	16.1	87	2.2
28	36.7	58	15.4	88	1.9
29	36.0	59	14.7	89	1.7
30	35.3	60	14.1	90	1.4
31	34.6	61	13.5	91	1.2
32	33.9	62	12.9	92	1.0
33	33.2	63	12.3	93	0.8
34	32.5	64	11.7	94	0.6
35	31.8	65	11.1	95	0.5
36	31.1	66	10.5		
37	30.4	67	10.0		
38	29.6	68	9.5		
39	28.9	69	9.0		

Long and careful observations have shown that though the life of any given individual is proverbially uncertain, yet, if a large number of persons in ordinary circumstances at a given age be taken, there is a law, fixed and uniform, determining within very narrow limits the average number of years of life remaining to them. For example, if we take 10,000 persons at the age of 29 years, the sum of their ages at death will amount to about 650,000 years, showing that, on an average, each person now 29 years old will live very nearly 36 years longer. This mean after-lifetime is called the *expectation* of life at the assured age, that is, the number of years which one at that age may *expect probably* to live, though many will die sooner, and even 72 out of 10,000 during the first year.

THE HOME LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

That you may understand our views of the interesting and important relation which you sustain to this Company—of the manner of entering upon and conducting your examinations, and of the main points of inquiry submitted to you in our blank forms—permit us, very respectfully, to request your careful attention to the following suggestions and instructions. In communicating them to you we would not be understood as attempting to teach you in matters pertaining to your profession, but simply to remind you of many points which, while they may be familiar to the educated physician, may never have claimed his attention in connection with their bearing upon Life Insurance, and as affecting the chances of longevity in individual cases.

THE CHARACTER OF THE RELATION.

The relation which a Medical Examiner sustains to a Life Insurance Company is one of a strictly *confidential* character. His appointment is direct from the Home Office. He occupies his position *entirely independent* of agents and solicitors, and should therefore always feel that he is *peculiarly* the guardian of the interests of the Company, and bound by every consideration of personal and professional honor to discharge his very important and responsible duties with the utmost fidelity, and with an eye single to those interests.

Our Agents are instructed that all examinations must be made by our regularly appointed physicians, when practicable; and if soliciting in a new field, they are to report to us at once the name of some regularly educated physician of skill and good character to act for us; but in no case should he ever solicit a physician for insurance by holding out the inducement of appointing him as medical examiner. The fee allowed by the Company for each examination is from \$2 to \$3, and is paid whether the applicant is received or rejected; and when urinary analysis is necessary a corresponding amount in addition.

In all cases where the application is for over \$5000, we require such a chemical and microscopical analysis as would reveal, if present, albumin, sugar, casts, or blood or pus corpuscles.

THE RELATIVE POSITION OF APPLICANT AND EXAMINER.

It is obvious that in conducting examinations of parties for Life Assurance, the relations existing between the applicant and the Examiner are wholly different from those which the physician sustains to his patient, and that the conduct of the patient will differ accordingly. It should be borne in mind, therefore, that while in one case the patient is ready and eager to communicate each unfavorable symptom which he imagines to exist, in the other he is tempted to withhold everything that may convey an unfavorable impression. It becomes necessary, therefore, that the Examiner shall be on the alert to seek out any indications of hidden disease, and any constitutional or acquired tendency or predisposition thereto.

FIRST, HAVE THE PAPERS ALL BEFORE YOU.

Before an applicant is examined, the application, together with the certificate of his family physician and personal friend, should be completed and placed in your hands. It is important, in all cases, to have the certificate of the family medical attendant, whether he has ever had occasion to prescribe for the applicant or not, and we desire you to require it, unless you are satisfied that it cannot be obtained, in which case, please state the fact in your report.

READ ALL THE ANSWERS CAREFULLY, AND REVIEW THEM WITH THE APPLICANT.

When the papers are handed to you, please read with care all the answers of the applicant and of his friend and physician; and when he presents himself for examination, read over to him the questions and *his* answers distinctly, so that he may again consider whether he has given full and explicit answers on all the points referred to. It will often occur, by this course, that the Examiner will obtain information from the applicant which he has withheld in his application, and which will aid materially in arriving at a correct conclusion in the case.

A SOUND LIFE THE ONLY STANDARD.

Conduct your examinations with the fact constantly in mind that our rates for assurance are predicated on a *sound life*; that there is no *average standard*, the simple question being, Is the party, so far as you can possibly discover, free from disease or any personal, hereditary, or acquired predisposition to disease? If after the most thorough examination, your mind is in *doubt* on this question, you will of course advise that we decline the risk.

REPORT FULLY AND DEFINITELY.

Referring to the questions contained in the form for your certificate, we beg that your answers to each shall be as definite as possible as to all the points embraced.

GENERAL CONDITION.

The first thing to which the attention of the Examiner is attracted, before proceeding to the detail of a personal examination, is the condition of the party, both as to personal health and social condition. An impression at *first sight* favorable to the party or otherwise is involuntary; but however strong this may be, it should serve only to prompt the Examiner to follow out these indications until he discovers the causes which so vividly impart their character to the general appearance. The *occupation* and *personal habits*, in their varied form and connection, and the influence of family predisposition, will therefore be first considered.

OCCUPATION.

The studious man of nervous temperament discovers himself by the pale face, the intellectual expression, and the quick comprehension of any subject which may be suggested. In those of this class, whose imaginations are active, we look for an overtaxed brain which, in its extravagance, may lead to mental disease. Others of the same class, occupied in pursuits where the judgment is brought into action, suffer from sluggishness of the system, and torpor of the entire digestive apparatus. The *commercial man*, accustomed to tax all his

powers to accomplish a certain object, exhibits often the effect of mental tension in an unmistakable aspect; anxiety is depicted on the face; you see clearly that he is a dyspeptic. In some, their appearance indicates that their ability to digest and assimilate food is nearly gone. *Clerks, Book-keepers, Watch-makers, Engravers, Shoemakers*, and all whose occupation leads them to press the chest in a constrained posture, will show the effects on the general form of the body, in the measurement of the chest, and in the features and expression of the face.

Bakers, Cooks, Glass Workers, Working Engineers, Founders, Blacksmiths, suffer from deteriorated air, and the alternation of cold and heat. Such persons show the effects of their modes of life in fatal diseases of the pulmonary organs, and of the hepatic system. Of all occupations, those persons exposed to vegetable and mineral emanations exhibit the greatest amount of mortality; next are those who work in places where dust abounds (as in *flour mills*), *Stone-cutters, Cutlers, workers with threshing machines*, etc., the effect of whose occupation is to aggravate greatly any constitutional tendency to consumption, and to induce bronchial disease. *Workers in lead or arsenious preparations, Paper Stainers, Lucifer Match Makers, all workers in metallic melting*, are apt to be short-lived. *Plumbers and Painters*, subject as they are to partial paralysis and colic, and other effects of lead poisoning, are to be taken with extreme caution, if at all. *Pyrotechnists* should be deemed ineligible for Life Insurance.

COMPLEXION.

This term is used to denote the color of the face, as *pale, dark, ruddy, sallow, etc.* The intelligent Examiner will note the complexion very carefully, and draw important conclusions from it. If the family history of the party examined shows that they have not been long-lived, and that some of them have died of hepatic disease, and should he present the well-known sallow complexion of even a slight chronic affection of the liver, the Examiner will hesitate; or a decidedly *pale* appearance of the face may be a sufficient reason for withholding approval. This extreme paleness often marks the existence of chronic diseases of various kinds. A very ruddy or florid complexion indicates plethora, and where diseases of an apoplectic character have been in the family, suspicion should be excited by this appearance. A dusky, or leaden, or livid, hue should lead to a careful examination of the thoracic organs, and especially of the heart, as indicating imperfect aeration of the blood, or obstruction to the venous circulation. A bright pink color sometimes exists in connection with valvular disease.

A scrofulous physiognomy exhibits the face slightly bloated; skin delicate, whitish, transparent, somewhat pink, or of a rosy tint; eyes blue, pupils large; upper lip thick; nose slightly swelled, red and shining; hair light.

GAIT.

A tardy or laborious gait indicates either debility of the muscles, bones, or joints. A staggering gait occurs from vertigo. A tottering gait is often the result of habit, but in some instances it marks the sequel of disease of the hip-joint. A bowed gait (walking with the body bent) is a sign of muscular debility, or affection of the spine. A stiff gait (when the joints of the lower

extremities are but little moved) may be the consequence of tumors in the inguinal regions or perineum, of psoas abscess, hernia, or disease of the genito-urinary organs, or of the rectum.

MUSCLES—BONES.

The general excessive but uniform development of the muscular system shows a preponderance of the vascular system, and such persons are in general good risks. Imperfectly developed muscles, with bones small and slender, show a tendency to nervous debility. The affections to be apprehended in such persons are those of the brain and diseases of the form known as asthenic; slim bones are also indicative of phthisis. Firm muscles indicate good health, and a state of nutrition proportionate to the activity of the muscular system. The absence of fat is not inconsistent with a healthy and vigorous constitution.

HABITS.

Intemperance in the use of alcoholic drinks is a fruitful source of disease. Persons who now are, or *ever have been*, addicted to habits of intemperance, are in all cases to be declined. The experienced Examiner will easily detect the signs of an habitual drinker of intoxicating liquors. The condition of the nervous system will reveal the fact; the offensive or ether-like odor of the breath; furred or tremulous tongue; the eyes, etc. But it is not so easy to detect the fact when the party has but just commenced the destructive habit, and therefore extreme vigilance on this point is required.

In this connection we would call your attention to the greatly increased drinking of beer, the tendency in very many cases being to its excessive use, which, when once become a fixed habit, sensualizes and degrades the mind as well as the body, and is a potent factor in reducing the average of life. When you have reason to believe, either from inquiry or an unusual plethora of the applicant, that he is a large consumer of it, the risk should be declined.

Tobacco.—Allied to the use of intoxicating drinks is the inordinate use of tobacco. The effects of the habit are to be considered relatively to the constitutional peculiarity of the individual. The oil of tobacco, as is well known, is a violent poison. If its use can be entirely abandoned, the general health would be vastly promoted; but this is too much to hope for; we must, therefore, consider its use in connection with its supposed effects. These are frequently an inordinate disturbance of the nervous system, producing a permanently rapid, often intermittent, pulse, occasional palpitation of the heart, loss of appetite, and emaciation. Where these symptoms are found to exist, the life should not be recommended until the habit has been abandoned, and the functions of the system have been restored to healthy action.

Opium.—The opium eater must, of course, in all cases, be declined.

SIZE.

Ascertain and state the *exact* weight and height, the circumference of the chest at inspiration and expiration, and the circumference at the abdomen.

The table annexed, of weights, as to height, will be your general guide, any marked deviation from which should attract attention, and call for a rigid examination as to its causes; the simple fact of such variation, however, is not

to be regarded as conclusive ground for rejection. In cases where the weight is excessive, we are to inquire of what it consists; if of large bones and muscles, with corresponding strength, it is evidence of large vitality; but if it consists of great deposits of fat, with a large abdomen, the conclusion must be unfavorable to the life. In cases where the increase of weight is above the standard, but where the increase has been gradual, the risk is to be regarded more favorably than in those in which the same condition has been rapidly obtained. Intemperance, either in eating or drinking, or both, and the absence of regular habits of exercise, are the usual causes of such rapid increase in size. Loss of weight occurring rapidly will indicate the presence of some form of pulmonary disease, or of some affection of the kidneys; if the same process be slow, it points to chronic diseases; in either case the life must not be recommended. If a person whose weight is much above the standard is at times subject to drowsiness or other signs of cerebral congestion, or to the existence of chronic eruptions or ulcers, or if there is anything in the history of the family indicating a disposition to apoplexy or palsy, the risk must of course be declined.

In order to come to a just conclusion in such cases, it is indispensable to ascertain the antecedent personal history of the applicant in these respects.

MEASUREMENTS.

The chest should be measured with a marked tape, over the nipples, while in a state of expiration, and also when inflated. The difference is, in the average, two inches. Should the expansion be not more than half an inch, the party ought at least be temporarily rejected, until, by habitual inflation, the ability to expand the chest is decidedly improved. This can be done with advantage to the general health, but is only to be required of the party when there is no positive evidence of affection of the vital organs, because if such evidence exists, no further inquiry is pertinent in the case. The measurement must be taken *under* the vest. If there be any pain on expanding the chest, the part where it exists must be noted, and subjected to the most careful scrutiny by auscultation and percussion. A well-formed chest appears, on a casual inspection, to be symmetrical, but it is not so. The right side is found to be larger than the left, and there is naturally a little more fullness on the left side beneath the left clavicle than beneath the right, owing to the left lung rising higher than the right. With these exceptions, the healthy chest appears uniformly rounded, and free from bony projections. The form known as "*pigeon-breasted*" and "*chicken-breasted*" is not in itself a ground for rejection if the general capacity is maintained, and the uniformity is complete. Distortions of shape, as the flattening of some part, particularly in the subclavian region, should excite a suspicion of tubercle. *Enlargement* about the middle of the chest marks dilatation of the pulmonary cells, or enlargement of the heart. Pleurisy will leave ligamentous attachments, and thus flatten the chest on one side. Where this flattening is marked in extent, it may become a serious source of future disease.

The abdomen, especially if unduly prominent, should also be measured, as when taken in connection with the height and weight, it will form an important element in determining the insurability of the applicant.

VACCINATION,

Now so universally adopted, is, of course, an essential pre-requisite to life insurance; it should be ascertained, as far as possible, if it has been satisfactorily performed.

The evidence of the protecting power of vaccination, in any given case, is the appearance of the cicatrix—the circular form with remains of the vesicular pits, cannot be mistaken, and, when found, is sufficient. As to whether the effect of vaccination is not destroyed by time, there are different opinions. The probability is that if it is properly performed, and has taken properly, its protection will be permanent. In justification of the opposite opinion, however, it should be remarked that different persons have more or less susceptibility to both the vaccine disease and smallpox, and in many this susceptibility may not have been extinguished by one vaccination. The modified smallpox may, therefore, appear in some during the prevalence of an epidemic. To guard against this, it is always well at such times to have the vaccination performed the second time, that whatever susceptibility to the disease still remains, may be destroyed; and in any case where doubt exists, a revaccination should be insisted on.

RESPIRATORY ORGANS.

The Vibration of the Voice is felt by applying the hands to the chest while the party examined is requested to count audibly.

This will often lead to the discovery of pulmonary disease, and when a difference between the two lungs is marked, the facts will come more clearly to light by auscultation and percussion.

The difference in vocal vibration is important, in proportion to the extent of surface over which the difference is observed.

Auscultation, either by the ear alone or with the assistance of the stethoscope, or by striking the chest with the fingers, will reveal the quality of the respiration. In the normal condition the inspiration exceeds the expiration in duration and audibility. Inspiration increases uniformly in intensity, until the middle of its duration, when it becomes weaker, until it is imperceptible, when the sound changes to that of expiration, without any pause. The normal length of the expiratory sound is about one-third that of the inspiration. Any deviation from this is a sign of disease—the greater the duration of the expiration the more significant of wrong. The departures from healthy respiration necessary to be carefully noted are, the varied intensity in different parts of the chest, the cessation of vesicular murmur—blowing or bronchial respiration—the crepitating sounds, the amphoric bruit, the ascending and descending sound of fluctuation and cavernous ronchi. The sounds of the voice important to the examiner are bronchophony, ægophony, and pectoriloquy.

Percussion is one branch of auscultation, although custom has confined the latter term to the listening of sound by the ear applied to the chest. Percussion elicits sound by striking on the walls of the chest. The lungs being spongy in their structure, containing a quantity of air, they yield, when struck, a sound somewhat hollow, but much less so than if the parts were empty. The more air there is within, the more hollow it will sound; hence the difference in sound on inspiration and expiration. The chest imparts a clear sound when there is more air, and less clear as the quantity is diminished. The thickness of the

walls of the chest affect the sounds also—it is much more dull if the parts are covered with muscles or fat. The lungs are in contact closely, on both sides, in the upper and middle part. They extend, on the right side, to the sixth rib in front; on the left side to the seventh; and at the centre to the fifth. The mass of the liver on the right side produces a dull sound below the level of the sixth rib. The lungs are, indeed, in close contact with the wall of the chest in every part, with the exception of a small part to the left of the sternum occupied by the heart; here the chest yields a dull sound. Wherever the substance of the lung is thin, the sound of percussion is modified by the viscus lying immediately behind it, as in the region of the liver. Percussion can convey no positive information of the real state of the organs which convey air, where the diseased portions are thinly scattered, as in miliary tubercles; yet, taken in connection with other signs, may be of importance. This remark will be understood when it is borne in mind that the sound may be more or less obscure when corresponding parts of the chest are compared and varieties, if any, noticed, according to the parts percussed. The departures from health to be noticed on percussion are dullness and the cracked sound referred to in treatises on physiological examinations, the latter denoting pulmonary cavities lying near the surface of the lungs.

THE HEART.

Vibrations from the action of the heart may be ascertained by placing the hand over this organ, at the point corresponding to its apex, at the sternum, and at the epigastrium. We are thus enabled to judge of the strength with which the heart acts. If the hand is raised over a limited space with some force the natural inference is that the heart is strong; if no such effect is perceptible, it is weak. A large heart and a small chest, with a general disposition to emaciation, do not furnish a good subject for insurance. A very strong impulse must be a cause of rejection, allowance being made, however, for the effect of temporary excitement in persons of a nervous temperament; whether the disturbance is from the latter cause must be determined by prescribing to the party a little delay and rest. If necessary, two or three examinations should be made at different times, so that the Examiner may fully satisfy himself on this very important point. Impulse felt over a very extensive surface usually indicates hypertrophy or other disease sufficient to cause rejection.

Any abnormal sound of the heart conveyed to the ear in auscultation, even such as are ascribed to anæmia, must, while it lasts at least, be regarded as an absolute disqualification.

Percussion reveals that the heart is in contact with the chest from twenty to twenty-four lines in all directions. The heart, where it is not in contact with the parietes, extends about one and a half or two inches to the left, and is covered with a thin layer of pulmonary substance. The distance from the clavicle is three to three and a half inches. Whenever there is eccentric hypertrophy, there is an obscure sound over the heart, and, if it is considerable, the dullness is very extensive. When the muscular structure is dense, as in concentric hypertrophy, the dullness is not so marked, but the strong impulse denotes its condition. The marked dullness of greater or less extent, and the permanent increased impulse, are the points demanding the most careful notice.

DISEASES OF THE HEART

are among those which have prevailed in families. Successive generations have had enlargements of this organ, or have been affected with aneurisms. When a parent has died of these diseases, it is necessary to examine the applicant with more than ordinary care. Advancing age in diseases of the heart tends to aid in their development rather than to better the predisposition, as in the case of phthisis.

Palpitation.—Increased action of the heart from whatever cause is the foundation of this symptom. The slightest mental emotion, fatigue, anything that increases the movement of the organ; sometimes palpitations are transient or momentary; at others persistent, strong and tumultuous. Every opportunity should be afforded to tranquillize the nervous system on the appearance of this symptom. Easy and composed conversation during the examination; a second interview, referring the candidate to some occurrence which may have happened a short time before; a recumbent posture, etc. All this on the supposition that it arises from a temporary disturbance of the nervous system, and for the purpose of testing thoroughly the correctness of that theory or the reverse. If the party is subject to these affections, it is necessary to keep in mind the causes which often induce them—as eccentric hypertrophy, ossifications, valvular disease, adhesion of the heart to the pericardium, polypi, obstructions in the aorta, and affections which disturb the lesser circulation.

The Large Blood Vessels.—The blood vessels are liable to diseases at their origin, and to aneurism and ossifications. The sound indicating the existence of an aneurism is much like the bellows sound.

ASTHMA.

Asthma is a frequent symptom of some organic disease affecting the heart, larger vessels, or lungs, and it is always to be referred to one of these organs for its origin, unless it can be satisfactorily ascertained that it is purely spasmodic or attributable to the effect of indigestion or the inhalation of the dust of hay, ipecacuanha, or other irritant cause in the atmosphere. One cannot be considered as cured, even of spasmodic asthma, unless a long period of immunity has existed since an attack. It is, moreover, not to be forgotten that persistent or frequently repeated paroxysms of asthma may be a cause as well as a consequence of disease of the heart. All such cases, therefore, should be received with great caution.

COUGH.

No person should be received who labors under a cough. The only question that has ever arisen is in regard to those who are subject to cough, but who at the time of examination are free from it. There ought, however, to be no doubt in these cases; all such persons must be declined until sufficient time has elapsed (several months or a year) to prove conclusively that the party has ceased to be subject to this affection.

SPITTING OF BLOOD.

This is a subject of great interest to the medical examiner, for in the greater number of instances it indicates a disposition to phthisis. Simple bleeding from the respiratory organs does not itself mark a serious affection of the lungs,

because the appearance of the blood in the mouth does not always denote that it has come from the pulmonary tissue. The source of the blood may be, first, from the mucous membrane of the air passages, or from the pharynx, a simple exudation; second, from rupture of a blood vessel; and, lastly, from tubercles in the lungs. Bleeding from congestion of the mucous membrane of the bronchial tubes is often transient, and frequently gives permanent relief; its lightest form, that of simple exudation, need not be a cause for rejection; sufficient time must be allowed to elapse to ascertain, together with an examination of the chest, that it is of this nature. Rupture of a blood vessel from violent straining need not be a reason for declining the party, allowing, as in the case just mentioned, a long time to elapse to prove conclusively that it is but local and temporary, unconnected with constitutional affection. If either of these should be followed by a cough or occasional difficulty of respiration, the party must of course be declined. It is needless to mention that such persons require a much more careful examination as to the physical condition of the lungs, or that their personal history, and that of their family, must be entirely unexceptionable as regards diseases of the respiratory system. Parties sometimes state that they have had spitting of blood, when upon careful inquiry it appears evident it has come from bleeding gums, from the back part of the nose, or from a scratching cough, simply removing a small portion of the mucous membrane of the throat; all such cases are of no importance; *but it is very important* not lightly or carelessly to assign them to this category. When blood is the production of tubercles it frequently makes its appearance in streaks in the mucus expectorated in ordinary coughs; this and regular hæmoptysis are the serious affections to be guarded against, and, where any symptom of these exist, the case must of course be declined.

INCIPIENT PHTHISIS.

The suggestions already made with respect to the organs of respiration will indicate sufficiently the signs of phthisis in its incipency. It will not be amiss, however, to note here some of its rational symptoms. They are so obscure at the beginning that it may be useful to allude particularly to them here. Regular phthisis usually begins with a short dry cough, so slight often as to become habitual, before it attracts attention. It is often without any other symptoms than mere lassitude, with a peculiar clearness of the complexion and a remarkable pearly lustre of the eye, and will continue to progress a long time before there are other symptoms positively indicating disease of the lungs. The breathing will become hurried and easily increased by exercise; when the disease advances the cough will gradually become more severe, especially at night, with straitness and oppression in the chest, and expectoration of frothy mucus, sometimes tinged with blood. It is unnecessary to say that when any of the symptoms of this terrible disease are found to exist, the party is ineligible for life insurance.

FAMILY HISTORY.

In connection with this subject, it is to be observed that the greatest caution is demanded when several of the family of the applicant are said to have died in *childbed*. Experienced examiners have long since come to regard these statements as either made ignorantly or with a design to mislead, for the num-

ber of deaths reported from this cause in applications for life insurance greatly exceed those within the experience of any physician, and which are reported in any reliable way. Every physician of experience knows how in cases of phthisis the fatal period is postponed by the progress of pregnancy, and how rapidly it approaches after confinement. On a careful inquiry it will usually be found that the mother or sister has been feeble for months; has had a cough, and has died in a short time after the birth of the child. Whenever, therefore, there has been a death in the family from consumption, it is fair to presume that the death in childbed was from the same cause, unless there are clearly established facts to rebut this presumption.

Pulmonary disease transmitted through the family demands very careful consideration. The inquiries addressed by the Company to the applicant, relating to the family history, are, of course, designed to elicit the facts as to the existence of any such hereditary taint. Diseases of family origin, termed hereditary, are, more properly speaking, predispositions. Hence, the actual development of disease requires some coöperating circumstances, and it is not in *every instance* where the parent has had disease of the pulmonary system that the applicant should be pronounced uninsurable. Consumption does not always descend from the parent to the child; but, if either parent has been so affected, and the offspring exhibits a slender form or has a narrow, badly formed chest, or an habitually rapid pulse, the predisposition is evidently so strong that some slight exposure or irregularity of living, or a constrained occupation in a close atmosphere, will almost surely develop the disease. Where both parents have died with pulmonary consumption, the party ought to wait till he has reached the period of life at which he is likely to be exempt. The danger is supposed to be measurably passed at say 45 years. When the party has reached that age free from any indications of the disease, he may be considered as beyond the probability of being exposed from the family predisposition.

In cases of collateral branches of the family, as brothers and sisters, the applicant must have passed the ages at which they died, and be himself free from any suspicion or tendency to the disease. While much must be left to the sound judgment of the Examiner, taking carefully into consideration all the facts bearing on the probability that the party is subject to such family predisposition, he should always incline to reject applicants in whose immediate family two cases of consumption have occurred.

BRONCHITIS,

acute or chronic, disqualifies the party. It is not unusual for the applicant to state that the party is perfectly well, with the exception of "a slight cold." All such cases must be postponed until the bronchial affection has passed away. If chronic bronchitis exists, of course the decision is to be deferred till the fact of cure is completely established. In all these cases there is great occasion for the exercise of sound judgment. The Examiner will consider the family and personal history of the party, the nature and frequency of the attacks, personal appearance, bodily condition, occupation, etc. *Millers, blacksmiths, and all workers in trades from which dust emanates, public speakers, etc.*, are in great danger from any tendency to bronchial difficulties. Affections of the pharyngeal mucous membrane are not to be confounded with those of

the tracheal and bronchial mucous membrane. The trouble in the upper part of the œsophagus is often transient, arising from slight dyspepsia.

ARTERIAL PULSATION.

The pulse of the adult male may be stated at 75 beats in a minute, and of the adult female 85, when in a sitting posture. The difference has been known to be as much as 26 beats between standing and sitting, but instances occur where no difference exists. The average difference is about 10 between sitting and lying. A very great difference is found in the frequency of the pulse at different times of the day; it is much more frequent in the morning, and decreases as the day advances. The pulse is often much accelerated after violent exercise, active mental exertion, and after eating and drinking freely; of course, the Examiner will consider these accidental effects. One of the most annoying circumstances attending an examination is the nervous excitement of the party, especially when the Examiner commences his investigations; the pulse beats violently and the heart thumps immoderately. The sounds are often of such unusual character as to lead to the suspicion of cardiac disease; the quickness of breathing will, however, generally convince the Examiner that the whole train of symptoms is owing to mere nervous excitement; a brief season of rest, with a quiet, composed and cheerful manner on the part of the Examiner, will generally reassure the party. A very good mode is to examine the pulse at the commencement, request the patient to be seated, divert his attention for a few minutes from the matter in hand by entering into conversation on other subjects. He will soon feel either that the dreaded examination is over, or that there is no cause for excitement. The pulse will be found to have diminished in frequency, and the heart will beat naturally again.

The beat of the pulse at the wrist has occasionally been the first intimation of cardiac disease, for when there is any amount of nervous disturbance it is not easily quieted; it does not readily yield to the usual effects of a recumbent posture. The sharp, tense thrill of the artery will remain after all attempts to quiet the nervous commotion have failed. The feeble pulse of a hypertrophied heart will, with the restored calm, sink into its customary diminished power. The pulse, when standing, should not beat more than 90 times in a minute. If it is more frequent at the beginning of the examination, the party should be induced to keep entirely quiet, in a recumbent posture, for a considerable time; if, with this treatment, it is not reduced to 90 or below, the case must be postponed for a day or two, and other like careful examinations be made. If, then, the rate is not reduced to or below 90, the party must be declined.

A very frequent pulse is in most cases an indication of some organic affection, usually of the heart or lungs.

When the pulse is below 50, it should be regarded as indicating cerebral disease or congestion of the medulla oblongata, or hepatic disease, and, of course, the risk must be declined.

The decidedly irregular pulse should lead the Examiner to decline to recommend the life. There is, however, a kind of uniformly irregular pulse—the irregularity consisting in a trifling departure from the rhythm of the heart, and occurring as uniformly as if it represented one cog of a wheel of less size than

its fellows. This (if the peculiarity has existed so long as to be fairly deemed constitutional) is not a cause for rejection.

It is always best when the pulsations at the wrist exhibit any departure, even temporary, from a strictly healthy condition, to consider it as an indication of cardiac derangement, and to hold the case under advisement until the Examiner is fully satisfied that no such derangement exists.

NERVOUS SYSTEM.

The Brain.—Insanity, or any appearance of mental derangement, *at any time or in any degree*, disqualifies for life insurance.

Insanity in the family, in any branch of it, whether lineal or collateral, must be carefully considered. One case will not establish the fact of a family predisposition, but two certainly will, for our purpose. An attempt is frequently made to explain the exciting causes in a given case or cases, with a view to show that the party ought not to be declined on account of family insanity. One case is traced to religious excitement, another to sexual causes, another to intemperance, etc. It is obvious, however, that in all these cases the predisposition existed in the brain, and needed but some exciting cause to produce the development of morbid action.

Apoplexy and Paralysis.—Any attack of this kind of course disqualifies. If both of the parents of the party have died from either of these, the application should be declined. If others of the family than the parents have died from these causes, a close investigation should be made as to the condition, form of the body, habits of life, and every other circumstance in the case, with reference to any probable predisposition of the party thereto.

Rheumatism.—A very common affection, of peculiar interest to the Examiner, from its connection with the heart, is rheumatism. When a party states that he has had this disease, it will be necessary to inquire very particularly as to the nature, severity, duration and frequency of the attacks. A party *subject* to rheumatism must not be recommended, especially if it appears to be a family disease, even though there be no evidence of cardiac affection, as the probability is that sooner or later this will be developed. Of the two, muscular and articular, the latter description is most likely to produce disease of the heart.

Gout is a most dangerous affection, and is usually regarded as a cause for rejection. It is preceded by dyspeptic symptoms and attacks at adult age, while rheumatism occurs at any age. Gout attacks the smaller joints, and does not usually shift its seat, except by metastasis to a vital part; hence its great danger.

Epilepsy.—This affection, occurring after childhood, must, of course, demand the rejection of the party, even if there has been but one attack, or should the party have what has been *deemed* such an attack, though its precise nature is left in some degree of doubt. If the parent has been thus afflicted, it is safest to decline the child.

DIGESTIVE SYSTEM AND APPENDAGES.

Dyspepsia is one of the most common affections, and so long as it indicates no other functional loss of the power of digestion, it is not of very serious im-

portance. If, however, there is much emaciation and great debility, or an appearance indicating inflammation or some organic lesion, the Examiner will, of course, decline the risk.

Diseases of the Liver.—If it appears that the party has been subject to occasional attacks of jaundice, or other diseases of a bilious nature, the Examiner will not only scrutinize the condition of the system with great care, but will also inquire into the causes of death of the members of the family, and their relative ages at death to that of the party, as these diseases are among those that are traceable to a family predisposition.

Diarrhœa.—Chronic diarrhœa, and constant tendency to looseness of the bowels, often indicate the existence of organic trouble of some kind, especially tuberculosis, and therefore such a case should be declined.

Colic, when produced by indigestion, flatulence, or other transient causes, is of no importance; but the form known as *bilious colic* is of a different and very serious nature. One attack of this kind may be accidental, and is not sufficient to warrant the decision that the party is subject to the disease, but two attacks will justify this presumption, and the party must be declined. When it appears in the application that the party has had one or more attacks of *colic*, it is important that the Examiner shall carefully investigate the facts, with a view to decide as to its nature.

Dysentery, especially after a severe attack, is very liable to recur the next year or later; hence, careful inquiry should be made when the attack has been recent, and the case declined if anything indicates the probability of a recurrence.

Hernia need not render the party ineligible, provided it is properly secured by a truss, and the occupation of the individual is such as not to endanger its protrusion by excessive straining. It is always proper to examine what is described as hernia, for it sometimes proves to be a testicle that still remains above the scrotum. In other cases, it is so connected with enlarged veins of the scrotum that the wearing of a truss aggravates the danger. In all cases the report of the Examiner should describe the extent and character of the rupture, and the probable effect of the truss.

Hernia in the *female* is, for various reasons, in all cases, a good ground for rejection.

Fistula, if still existing, should reject; and if cured should lead to more careful inquiry into the state of the lungs; for this disease is not infrequently associated with tubercle, and when cured usually hastens death from that cause.

GENITO-URINARY SYSTEM.

The consideration of the affections incident to the female, where the generative organs are the subject of inquiry, are of much greater importance than in the male. There are two periods in the life of a female that ought particularly to be regarded as of special interest to the general health—that of puberty, and that when the menses are about to cease. If these are passed without any diminution of health, the best evidence is afforded of the safety of the risk.

There is a long intermediate period during which there are derangements which must be regarded as rendering the life unassurable. Irregular returns and dysmenorrhœa must cause rejection. Frequent miscarriages, if they do

not indicate natural feebleness of constitution, must tend to impair the health, and such cases should be declined, unless there is abundant evidence that the danger is passed, and that no serious detriment to the constitution has been sustained. If there has been from any cause, even after a healthy labor, severe uterine hemorrhage, the application must not be entertained. There is so great unwillingness to impart any information on these subjects that the slightest unfavorable indications must lead to the inference that much more is concealed, and that the risk should be declined. It is deemed best always to decline a female during the period of *her first* pregnancy, and until she has fairly recovered her health and strength.

A contracted pelvis is a fatal objection, of course. Inquiry should be made as to history of labors, whether instrumental or not, etc.

Urinary Diseases, involving any structural change, or even any considerable functional derangement of these organs, should of course reject. Into this category comes Bright's disease, diabetes, calculous affections, chronic cystitis, enlargement of the prostate gland, and stricture of the urethra. Persons who are subject to retention of urine or catarrh of the bladder are not fit subjects for insurance. If albuminuria is suspected, the urine should be tested, and in some of the other affections a microscopical examination may be desirable. A puffy condition of the eyelids, or impaired vision not ascribable to other causes, should lead to the suspicion of albuminuria, as either of these may be the only symptoms present, even when the disease has already made considerable progress, and in all cases where the application is for \$5000 or over, apply the test.

Syphilis.—If there are any symptoms of secondary syphilis, the risk must not be advised.

Injuries and Deformities.—Nothing, of course, need be said of injuries which manifestly lessen the prospect of life. There are many, however, that indirectly interfere with the full exercise of healthy functional power, in respect to which it may be doubted whether they actually impair the expectation of the individual. Of the first class are amputations, or other surgical operations *for the cure of disease*. These, too, frequently operate only as temporary relief, and the disease soon develops itself afresh in some other part, and therefore it is always the dictate of prudence to decline to recommend such a case, however complete the cure may seem to be. Amputation *for injuries* need not always be a ground of rejection; great caution must, however, be observed in regard to this class of cases. If a large limb has been removed, it is to be considered that unless the digestive powers are much impaired, a larger quantity of blood will be supplied than the body requires, and plethora, with its consequences, is very apt to ensue. The Examiner must weigh well all the circumstances in connection with the condition and peculiar circumstances of the party, and sufficient time should always elapse after the operation for the development of any change that the constitution may experience. Any injury requiring the use of crutches will disqualify a person for assurance till the power of locomotion is restored or replaced. The *loss of an arm*, particularly if above the elbow joint, is a very dangerous mutilation, because it renders the person unable to help himself in danger.

Blindness and *deafness* are positive objections, and, if total, disqualify, of course.

The *deformity* of a *hunchback*, if occasioned by disease, is a cause for rejection; if the result of an injury, it depends on the extent and seat of the injury whether the risk should be advised. Angular curvatures (so-called) of the spine are frequently attributed to falls, and no doubt this is often the exciting cause. But it is to be considered, in this connection, whether the same accident would have led to the same result in a perfectly sound constitution. Careful scrutiny, in most of these cases, will elicit evidence of a scrofulous taint, and, unless this is manifestly absent, the case should be declined, even though the present health of the party may be good and no morbid process actually going on in the spinal column. This applies to the disease whether occurring in the lumbar, thoracic or cervical portions of the spine.

The state of the respiration and other points will be carefully noted, and the Examiner will arrive at his conclusion from a very careful survey of the whole case, always bearing in mind that any departure from the undiseased shape of any part of the chest interferes with a vital operation.

Deformity of the pelvis has been already referred to as influencing the prospects of life in a woman about to be a mother; in the male it can be of no importance unless the urinary organs or the intestines are influenced by it.

TUMORS AND SWELLINGS

existing in any part of the body should be carefully scrutinized, and, if not unquestionably of a benign character, or if liable to interfere with the functions of any important organ, are a sufficient ground for rejecting the case.

REGISTER.

You will be furnished by us with a suitable book in which to register your examinations, and in which, we hope, you will enter all the particulars relative to every case that you examine.

REPORT.

If for any reason it seems desirable, you can detach your report from the application and transmit it direct to the office, with any remarks that you may deem it proper to make, and it will in that case be treated as a *confidential* communication. Please be particular to answer all the questions in the form for your report *categorically*. *We shall, of course, understand that your conclusion expresses only the conviction of your own mind.*

In conclusion, permit us to beg that you will remember, in the discharge of your honorable and highly responsible duties, how important it is to the widows and orphans, who are the chief parties in interest in a Life Insurance Company, that you shall conduct *every* examination with the best skill and judgment that you can command. If each Examiner fails to do this in but a single instance, and as a consequence we are by each of our Examiners led to assure one unsound life, the aggregate would so diminish the average vitality of our membership as seriously to injure the institution.

We earnestly desire to regard our medical advisers as permanent and confidential officers and friends of the Company, with whom we can communicate freely, and on whom we can rely to consult our interests by every means in their power. We shall, therefore, always be happy to hear from you on any subject of personal or official interest.

TABLE OF EXPECTANCY OF LIFE.

AGE.	EXPECTA- TION.	AGE.	EXPECTA- TION.	AGE.	EXPECTA- TION.	AGE.	EXPECTA- TION.
15	44.96	33	32.30	51	19.50	69	9.00
16	44.27	34	31.58	52	18.82	70	8.54
17	43.58	35	30.87	53	18.16	71	8.10
18	42.88	36	30.15	54	17.50	72	7.67
19	42.10	37	29.44	55	16.86	73	7.26
20	41.49	38	28.72	56	16.22	74	6.86
21	40.79	39	28.00	57	15.59	75	6.48
22	40.09	40	27.28	58	14.97	76	6.11
23	39.39	41	26.56	59	14.37	77	5.76
24	38.68	42	25.84	60	13.77	78	5.42
25	37.98	43	25.12	61	13.18	79	5.09
26	37.27	44	24.40	62	12.61	80	4.78
27	36.56	45	23.69	63	12.05	81	4.48
28	35.86	46	22.97	64	11.51	82	4.18
29	35.15	47	22.27	65	10.97	83	3.90
30	34.43	48	21.56	66	10.46	84	3.63
31	33.72	49	20.87	67	9.96	85	3.36
32	33.01	50	20.18	68	9.47		

TABLE OF HEIGHT AND WEIGHT.

HEIGHT.		MINIMUM WEIGHT.	MAXIMUM WEIGHT.	HEIGHT.		MINIMUM WEIGHT.	MAXIMUM WEIGHT.
Feet.	Inches.	lbs.	lbs.	Feet.	Inches.	lbs.	lbs.
5	...	100	150	5	8	122	200
5	1	105	155	5	9	125	210
5	2	108	160	5	10	128	220
5	3	110	163	5	11	130	230
5	4	112	165	6	...	135	240
5	5	115	170	6	1	140	245
5	6	118	180	6	2	145	250
5	7	120	190				

JOHN HANCOCK MUTUAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

The Medical Examiners of this Company are selected in all cases by and hold their office under the Medical Department, and independently of Agents. By the terms of your appointment, you will see that the Company depends upon you to protect its interests at all points in the selection of lives, and desires the fullest information which may in any way affect the risk, in the case of every applicant. A report upon every case examined by you is required, whether the result of your investigation be favorable or otherwise. All special communications regarding applicants, or upon other matters relating to your position, which you desire to make privately, may be addressed to the Medical Department at the Home Office. Remuneration for services in every case is assured to you by the Company.

There are three elements of great importance in determining the character of a risk in Life Insurance, viz.: the personal history, the family record, and the immediate condition of the applicant. It is with reference to these divisions that the blank is formed which is to guide you in making your examinations (see form of this Company). The blank is in all instances to be filled by yourself throughout.

The following directions are intended to call attention to some points connected with the performance of your duties which are of essential importance, but which, nevertheless, do not universally receive their proper degree of consideration:—

Weight.—If excessive, whether due to disproportionate amount of fat or muscle; the relation of present to past standard in reference to sudden corpulency or progressive loss; whether other members of the family are or were of heavy weight.

Occupation.—Its nature, whether sedentary, active, exposed to dampness, dust, etc.; its effect upon the health of applicant.

General State of Health.—Capacity to bear fatigue; whether business is ever interrupted by illness; present condition compared with that of former periods of life, etc.

The Examiner will direct his inquiries in connection with the list of diseases especially to the following point:—

Apoplexy.—Whether disposed to or ever threatened with symptoms of.

Asthma.—The nature, frequency and duration of attacks; whether increasing or diminishing in severity; whether influenced by residence, controlled by treatment, etc.

Coughs, Prolonged.—Their nature and duration.

Disease of the Brain.—Any symptoms of functional disturbance; “rush of blood to the head;” impairment of intellect; numbness of limbs; loss of muscular sense, etc.

Disease of the Heart.—Besides dropsy and palpitation, symptoms mentioned below, inquiry should be made with regard to pain in the cardiac region and left upper extremity; disability to ascend stairs or heights; difficulty or shortness of breathing; fainting; the presence of *arcus senilis* in old persons, etc.

Disease of the Lungs.—The nature and duration of any previous affection, and completeness of recovery; disposition to take cold; affections of throat; catarrh; difficulty of breathing; nature of cough and expectoration; the existence of night sweats, etc.

Disease of the Liver.—The occurrence of jaundice, and of what duration; pain in region of liver and right shoulder; condition of digestive system, etc.

Disease of Bladder and Kidneys.—In connection with the possibility of any affection of the urinary organs, inquiry should be made as to the appearance and quantity of urine passed; pain in the back; swelling of the feet or ankles, and puffiness of the eyelids; difficulty in breathing; state of vision, etc. Should reason for suspecting the existence of any such affection be discovered, a thorough examination of the applicant's urine should be made and the results reported. A mere chemical examination is not sufficient to determine the existence of some forms of Bright's disease, for instance, in which there is no albuminuria, and of which the detection of casts of the renal tubuli by the microscope furnishes the only evidence.

Urinary Analysis.—Whenever the specimen passed by the applicant is cloudy, it should be invariably filtered before the analysis is made. If the specific gravity is found to be over 1030 or below 1012, a second specimen should be subsequently analyzed.

Dizziness.—Its frequency, and the conditions which induce it, especially with reference to a tendency to apoplexy.

Dropsy, including oedema, anasarca, and ascites. Its character. When present, even at a distant period of the applicant's history, especial attention should be directed to the condition of the heart, kidneys, and liver.

Diarrhœa.—If chronic, of how long standing; nature of stools; how far amenable to diet or remedies; whether increasing or diminishing in severity; its effect upon the system; whether associated with chronic *dysentery* (next on the list), etc.

Dyspepsia, including all functional disturbances of digestion. Its character, if severe or of long standing; how far a symptom of other affections, such as an organic disease of the stomach, of consumption, of which it forms one of the most important and constant premonitory signs, etc.

Erysipelas.—Parts affected, and frequency of occurrence.

Fistula.—Its anatomical seat, history, and present condition as determined by personal inspection; is there cough or tendency to consumption?

Fits.—If epilepsy has existed at any period of applicant's life, ascertain, if possible, its cause, the severity, frequency and duration of attacks; their effect upon the system; the period which has elapsed since its disappearance, and whether treatment for the disease has been continued since that date.

Gravel.—Its nature to be ascertained from attending physician, or if existing at time of examination, by analysis of urine.

Headache.—Its character, and the causes which produce it, if possible.

Insanity.—If existing at any past period, its cause, character, and duration

should be accurately ascertained from the physician then in attendance. The mental condition at all times subsequently should be carefully investigated, as well as the question of family tendency to the disease.

Pain in the Back.—A very important symptom in connection with renal disease, and if persistent, requiring urinary analysis.

Paralysis.—Its seat, duration, and character: connection with impairment of special senses or intellectual faculties; effect upon health, etc.

Palpitation.—Nature and frequency of attacks; circumstances which produce them; association with other symptoms of cardiac disease; with fainting or dyspnoea; habits of applicant in respect to the use of tea, coffee and tobacco, etc.

Piles.—Whether external, internal, bleeding, or ever inflamed.

Rheumatism.—Whether acute, chronic, or muscular; frequency and number, severity and seat of attacks; whether ever accompanied by cardiac symptoms.

Rupture.—Its history; its immediate condition and seat (to be determined by inspection), whether reducible, retained in place by truss; and whether the latter is properly adjusted and constantly worn.

Spine Complaints, injuries or deformities of the spine. Their nature, duration, symptoms, amount of deformity produced, and effect upon applicant.

Spitting of Blood.—The most minute inquiry should be made as to the nature and circumstances of the case; the amount and character of the blood raised; whether expectorated, coughed or vomited; frequency and number of attacks, interval between them, and date of last; existence of cough and state of health at those periods. If referred by applicant to some other source than the lungs, the grounds for such statement should be closely investigated. The personal and family history of such applicants should receive special attention.

Syphilis.—Whether there have been secondary or tertiary symptoms.

Stricture of the Urethra.—This is important, as indicating possible bladder complications.

Varicose Veins.—How extensive; whether accompanied by ulceration at any time; condition of skin surrounding.

Serious Illness, etc.—If there has been at any time in applicant's history any serious illness not mentioned in the list of diseases, its influence upon his constitution should be ascertained and stated. If he has received any injury, the vestiges or effects of which still exist, personal examination should be directed to such parts, and a description of it given.

When did you last consult a doctor, and for what?

Are you now under a doctor's care? If so, for what?

Many applicants who, for various reasons, will give a negative answer to the list of diseases enumerated, will be reminded of some illness by the above mentioned questions.

Habits.—Explicit information regarding the applicant's use of intoxicating liquors is required in every case. If he has ever used them to excess, state how long and to what extent he was addicted to the habit when he desisted from it, and how far he may have been injured by it.

Family History.—The Medical Examiner cannot be too particular in his revision of the statements made by applicants in filling the blanks of these Sections. In every instance, the assigned cause of death should be made the

subject of inquiry, and especially when there is evidence of the existence of any hereditary disease in the family record. In all cases, too, the specific cause of death should be ascertained where this is possible, and where such definite information cannot be obtained, positive evidence of a *negative* character may be of equal importance so far as relates to consumption, heart disease, apoplexy, etc. In this connection avoid the use of all indefinite terms, such as "general debility," "change of life," "exposure," etc.

Health of Family, etc.—The Medical Examiner will also make special inquiry with regard to the health of the surviving members of the family, particularly if the previous examination has shown evidence of the presence of hereditary affections, and will state the nature of the complaint, if any member is not in good health.

PERSONAL EXAMINATION.

It is not the purpose of the Company in these instructions to offer a code of directions for the conduct of the physical examination of the applicant, for the character of the medical gentlemen employed at its various agencies is presumed to be such as to ensure a thorough performance of this important part of their duties. It is desired that all the questions proposed in the Medical Examiner's Certificate should be answered with the fullest details, and that particularly, when any deviation from the normal condition of the organs and functions therein made the subject of special scrutiny is discovered, its exact nature shall be stated. If the personal history of the applicant has shown the existence at any time of affections which tend to produce, or are connected with structural changes of important organs, such as pleurisy, rheumatism, or syphilis, for example, a positive statement as to the occurrence or non-occurrence of such changes should always be given, so that it may be known that the examination has been especially directed to these points. It is not always practicable to examine the chest without its clothing, but if there is the slightest suspicion in your mind, growing out of past diseases, which may have possibly left their impressions upon the heart or lungs, or out of the family history, you should examine these organs without the interposition of its covering. Recognizing the fact that, unintentionally perhaps, important facts may be withheld from you, you should use your best judgment in deciding whether the answers given to your questions coincide with the appearance of the applicant.

Should it be found that the number of respirations or the rate of the pulse per minute exceed the normal standard, and it is apparent that such acceleration is due to nervous excitement or recent muscular exertion, the rate should be recounted after a sufficient time has elapsed to allow the lungs and heart to return to their natural action. It may even be necessary to test the pulse upon different days to determine this point. In no case should the respirations be recorded above 20, or the pulse above 90, without stating explicitly that such means have been resorted to. In counting the pulse, also, it is always desirable to observe its rate throughout an entire minute, inasmuch as important irregularities in its action might otherwise escape observation. Moreover, should any deviation from the normal condition of the heart or lungs be discovered by auscultation or percussion, which may be due to slight and temporary functional derangement, such, for instance, as the sounds produced within the chest by a cold,

sufficient interval should always be allowed between their detection and the re-examination to establish their true character, and the certificate should never be filled until this can be explained beyond a doubt.

ELIGIBILITY.

Having thus elicited and recorded all the facts of importance in the case which personal examination and an investigation of the history both of the applicant and his family can furnish, it remains for the Examiner to consider the evidence thus obtained, and to express his opinion whether it justifies an acceptance of the risk by the Company. This is often a very difficult matter, and in some cases, where the evidence derived from these various sources is conflicting, it may be impossible for him to come to a positive conclusion. In such cases he should give an exact statement of all the circumstances, and the reasons of his inability to come to a decision. The final decision in every case rests with the Medical Department at the Home Office.

It is impossible to lay down fixed rules as to what shall constitute absolute causes for rejection. In general, it may be stated that applicants are not safely insurable—

If consumption has prevailed to any marked degree in the family; if apoplexy, or heart disease, have occurred in the parents of an applicant above the age of fifty years; if blood has been raised within ten years; if there has been an unhealed fistula within five years; if he has been intemperate within a recent period; if the pulse is irregular, or persistently above 90 or below 50; if the weight is greatly disproportionate to the height; or if a satisfactorily complete record of the family history cannot be obtained.

Reference to the medical attendant is always desirable when any point, connected with the past history of the applicant or that of his family, has not been explained by the personal examination to the complete satisfaction of the Examiner.

LIFE INSURANCE COMPANY OF VIRGINIA.

SUGGESTIONS TO MEDICAL EXAMINERS OF THE COMPANY.

Medical Examiners of this Company are respectfully and earnestly requested to be careful in the examination of every applicant presented; as only persons whose condition promises the fulfillment of the table of expectation are desired as risks.

The history of the family of the applicant, his own past history and present condition of health are all to be considered before recommending him as a fit subject for insurance.

As regards family history, it is a well established fact that long-lived parents produce long-lived offspring. "Longevity is one of the most persistent of inheritable characteristics."

It is equally as well known, that certain diseases are transmitted from parents to children. Hence the known fact of the existence of such diseases in the ancestry of an applicant should be well and carefully considered, before advising the Company to accept him for insurance. The *past history of the applicant's* health is also to be considered. If he has suffered from chronic cough, chronic inflammation of throat, chronic bronchitis, hemorrhage from the lungs, neuralgia, rheumatism, gout, tumors, fistula, hernia, frequent attacks of kidney or bladder diseases, stricture, chronic inflammation of stomach or bowels, secondary syphilis, scrofula, etc., their effect in the impairment of health should be considered most carefully, as few who have suffered from such diseases are fit for insurance. As regards the *present condition* of applicant: before an examination, he should be in good health. Even if slightly indisposed the examination should be postponed. If his habits are bad, such as excessive use of intoxicating drinks, or narcotics, or tobacco, he should not be recommended. The condition of the *respiratory, circulatory, urinary, nervous and digestive* organs should be examined with care.

As to the respiratory organs, the voice should be clear, the chest should be well formed, expansion good, vocal fremitus felt on application of hands to chest, motion of chest should be free, equal and even; the respiratory murmur should be heard clearly, so as to satisfy the Examiner that the lungs are normally permeated by the air, and that the larynx, trachea, etc., are in sound condition; there should be no cough, nor pains in chest, nor shortness of breath; in healthy respiration there should be an expansion of not less than two inches, and the number of respirations should be to the beat of the pulse as 1 to 4—that is, about 18 to the minute.

As to circulatory organs, observe that the action of the heart, its position and the space that it occupies are normal, that the impulse, rhythm and both sounds, indicate healthy condition of the organ and its valves and covering, that the pulse is natural as to strength, rhythm, regularity, and frequency, and that aneurism or varicose veins do not exist.

As to organs of digestion, observe that deglutition is easy, that there is no

disease of stomach, liver, spleen, or any other of the abdominal viscera, that there is no irreducible inguinal hernia, no double hernia, and no femoral hernia, no diarrhœa, dysentery, nor excessive dyspepsia.

As to urinary organs, observe that the bladder, urethra, kidneys, and their appendages are in good condition, that there is no acute or chronic inflammation of bladder, enlargement of prostate gland, stone nor stricture, that the kidneys perform properly their functions, that no bloody urine has existed, that the urine is healthy (by tests) if disease of the kidney is suspected.*

As to nervous system, observe that the senses are healthy, that there are no tremors, paralysis nor aberration of intellect, no jerking of muscles, nor epilepsy, and that the movements of the body and limbs are free and natural.

In the examination of females, in addition to the above, ascertain that the uterine functions are natural and that the menstrual flux is regular in time and healthy in condition, that is to say, that there is no amenorrhœa, dysmenorrhœa, or menorrhagia, also that there is no leucorrhœa, etc., no enlargement of ovaries, nor ulcerations, nor cancer of neck of womb. If married, whether subject to miscarriage or to difficult labors, and if at the change of life, whether there be reason to suspect the existence of any disease which is apt to show itself at that period.

Under no circumstances should an applicant be recommended when any of the following conditions exist :—

- (1) When both parents have died of consumption.
- (2) When one parent and a brother or sister have died of consumption.
- (3) Where he has had hæmoptysis, or when one parent has died of consumption and the applicant presents any evidence that he may acquire it.
- (4) When the applicant has had apoplexy, paralysis, epilepsy, loss of one of the senses, aberration of intellect, or hæmoptysis.
- (5) Where there is intermittence, or irregularity of the pulse, or heart's action, unnatural sounds produced by action of heart, habitual cough, difficulty of breathing, a pulse over 85 or under 60 in the minute.
- (6) Chronic dyspepsia with emaciation—too great or too little weight, if coming on suddenly, chronic diarrhœa, irreducible hernia or femoral hernia, or double hernia.
- (7) Cancer, psoas, or lumbar abscess, rickets, coxalgia, or white swelling of any of the joints, old ulcer, scrofula, fistula, spinal disease, caries or necrosis, permanent enlargement of spleen, chronic disease of liver, dropsy, diabetes, disease of kidney, intemperance and use of narcotics habitually, or excessive use of tobacco. In females, hernia, menorrhagia, ulcer or cancer of womb, ovarian disease, frequent miscarriages, and difficult labors.

After having maturely considered these points, although the general result may prove favorable, still, if the Examiner have reason to believe that the applicant, from any cause, will not live the period given in the Expectation Table, he should decline to recommend.

The Medical Examiner is independent of any extraneous influence. "He is not bound to try to please the Company, nor the Agent, nor the applicant." The only wish that the Company has in regard to him is, that he will be careful

* In all cases where the application is for over \$500, the urine must be tested.

in his examination and base his opinion on the results of it, and that if, after an examination, any doubt exist in his mind in regard to the propriety of a recommendation he will give the Company the benefit of the doubt. Whether he advise the applicant's acceptance or not, he is entitled to the fee.

Should any additional remarks, in regard to the condition of the applicant, not called for by questions on the application, be deemed necessary, they should be invariably made under the words "additional remarks," contained on the face of the application at the right corner of the bottom of the paper.

In making replies to the questions contained in the application the Examiner will please give concise replies, as too much writing is apt to make confusion and trouble. All the questions should be answered, and the answers to questions 14 and 15 should be given without qualification. In answering number 12, find out, if possible, the disease which caused the death of parents, brothers and sisters. Such information is of great importance; since the word "unknown" conveys no information, and often leads to the suspicion that concealment is intended, as it is certainly sometimes.

An individual in good health should approximate the following weight, though the exceptions are very numerous, as it often happens that persons in good health weigh less. A rapid diminution of weight or a rapid increase should attract attention always and lead to an investigation of its cause.

A person 5 ft. 2 in. in height should weigh 120 to 125 lbs.

"	5	"	3	"	"	"	125	"	126	"
"	5	"	4	"	"	"	128	"	135	"
"	5	"	5	"	"	"	136	"	140	"
"	5	"	6	"	"	"	140	"	144	"
"	5	"	7	"	"	"	145	"	148	"
"	5	"	8	"	"	"	148	"	150	"
"	5	"	9	"	"	"	152	"	155	"
"	5	"	10	"	"	"	158	"	160	"
"	6	"		"	"	"	160	"	165	"

MARYLAND LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

It is a well-established fact, that no matter how well the financial and other business departments of a life insurance company may be managed, unless the risks are carefully selected, it cannot continue to prosper. The stability of a life insurance company depends, in fact, mainly upon one point, which must be continually borne in mind, namely, that the subjects, in the aggregate, should outlive the average of longevity. This excess of longevity can only be attained by the Medical Examiners exercising the greatest possible caution in the selection of risks among the applicants who are presented to them. We need not remind you of the necessity of taking into thoughtful consideration every point that has any bearing whatever upon the question, as to the probability of the individual living beyond the period assigned to him by the tables—calculated by the united experience of life insurance companies. Our duty is not only one of great delicacy, but it is often attended with much that is disagreeable and painful. We are called upon to act as detectives in testing by searching questions the history of the subject before us, both as to his physical condition and his habits, past and present. We are obliged to endeavor to ascertain accurately what were the physical ailments and imperfections of the members of his family, even to two generations back. We have to exercise great tact, with unobtrusive gentleness, in treading upon such delicate grounds; at the same time our investigation must be thorough and stringent. In arriving at a conclusion, after carefully and deliberately weighing everything connected with the application, we must never lose sight of one simple rule—that the Company is to have the benefit of all doubtful cases. *It is, in fine, far better that a subject should be refused insurance than that the Company should take a questionable risk. At the same time no applicant should be refused insurance when his condition and record entitle him to it.*

Permit us briefly to call your attention to some especial points in the selection of risks which have been impressed upon us by a large experience. In the questions put forth by this Company, which have been framed with great care, you will notice that the applicant is required, previous to your examination, to furnish a statement of his exact age, weight, height, all of which have an important bearing upon the nature of the risk. The proportion between weight and height ought always to be considered. There are exceptional cases where there may be decided variations from the standard, but 20 per cent. is generally considered the maximum compatible with health. An adult in stature 5 feet 6 ought to weigh over 140 pounds. For every inch above and below this height we ought respectively to add or subtract about five pounds. More decided variations should always be looked upon with suspicion. We would especially call your attention to the question as to whether the applicant has recently increased or diminished in weight. If such has been the case, it would constitute a much more serious objection to the risk than an habitual divergence from the normal standard.

The habits of the individual must be closely scrutinized. If his occupation be a sedentary, indoor one, in itself it is unfavorable to longevity. If it involves great mental strain or unremitting physical fatigue, it must be carefully considered.

This Company avoids especially accepting risks on persons addicted to the *habitual use* of alcoholic stimulants. Many individuals who never drink to excess, take more than they can readily excrete. This habit impairs the nutrition of all the tissues of the body and leaves traces of degeneration in the heart, kidneys and liver, as well as of the minute vessels of the brain. We must beg you to bear in mind the importance of a close examination for evidences of constitutional syphilis, visceral as well as superficial.

Notwithstanding the care that has been exercised of late years in the selection of risks, life insurance companies have suffered from the great mortality from diseases of the heart and lungs, and from diseases of the kidneys. *Modern modes of testing the exact state of these organs, if faithfully applied, should prevent this.* Physical exploration of the chest, together with the general symptoms, enable the Examiners to detect these diseases in their incipency. The family record, which should be thoroughly investigated as far back as the grandparents, and should include the uncles and aunts on both sides, will enable us to find out whether the applicant has any hereditary vulnerability to tuberculosis. His personal history as to his having shown any delicacy of the respiratory organs must be diligently inquired into. The occurrence of hæmoptysis in the very large proportion of cases should oblige us to exclude the applicant from the benefit of life insurance.

Modern vital statistics have shown us that from 10 to 12 per cent. of the mortality of persons selected for life insurance die from diseases of the kidneys. There can be no doubt but that in past years many of the deaths assigned to other causes were, in fact, from one of the forms of Bright's disease. We urgently call your attention to these facts in order that you may be on the lookout for every slight alteration in the composition of the urine. You may thus detect these diseases in their incipency before the subjective symptoms betray them.

This Company has established the following rule for the guidance of its Medical Examiners. All applicants shall be required to furnish specimens of their urine for examination. The Examiners will apply the tests for albumin and take the specific gravity. In case the specific gravity is as high as 1026, he will also be required to test for the presence of sugar. These examinations of the urine are so simple and so easily applied that the Company expects them to be made without extra charge.

When the amount asked for is \$10,000 or over, or if the applicant be over fifty years of age, the Company expects, for its protection, a thorough physical, chemical, and, when possible, a microscopical analysis. The questions in the blank are leading ones. This Company expects you to add others if necessary to complete your thorough examination.

In conclusion, we respectfully call your attention to the final question in your examination, and beg that you will answer it only after a thoughtful perusal of the answers to all the other questions.

MASSACHUSETTS MUTUAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

The stability of a life insurance company largely depends upon the proper selection of the lives which it insures. It is the desire of this Company, therefore, that its Medical Examiners should fully appreciate the fact that to them are entrusted duties of the most vital importance. The Company aims to secure competent physicians only as its Medical Examiners, and upon their careful investigations and untrammelled judgment great reliance is placed.

The Examiner should always bear in mind that his position is an independent one. He receives and holds his appointment from the Home Office, made by the Chief Medical Examiner of the Company, after an investigation of his fitness for the position; and he receives his fee whether he accepts or rejects the applicant.

The examination of an applicant for life insurance necessarily resembles, to some extent, the cross-examination of a witness in court. The applicant is a witness in his own behalf, to whom rejection would be disagreeable, if not depressing, and it is but natural that he should present the most favorable view of every doubtful point in his family and personal history. It is the duty of the Examiner, therefore, by careful questioning and cross-questioning, to ascertain, as nearly as may be, the facts.

THE APPLICATION.

Before making the personal examination, the Examiner should insist upon the absolute completion of that part of the application to be signed by the applicant, and should read over the questions and answers carefully with the applicant, and, with his aid and over his signature, complete every imperfect answer, and explain, so far as possible, every ambiguous word or phrase.

Ambiguous and imperfect answers generally refer to one or more of the following points:—

1. *Occupation.*—Common answers are: "Manufacturer," "merchant," "clerk," "salesman," "fireman," "engineer." From such answers as these the Office can form no idea of the nature of the occupation. The *kind* of business and duties must be definitely stated.

2. *Condition of Health of Relatives Living.*—Such answers as "fair health," "not very strong," etc., must be explained and the nature or symptoms of the trouble ascertained and stated.

3. *Causes of Death of Relatives Deceased.*—Under this important head are often found the most ambiguous statements, such as "debility," "overwork," "childbirth," "dropsy," "liver complaint," "change of life," "accident," "nervous prostration," "some acute disease," etc. The real nature and the duration of the last illness must be determined, if possible, and fully explained.

4. *The Use of Alcoholic Liquors and the Use of Tobacco, Opium, Chloral, etc.*—In the consideration of a risk nothing is more important than the habits of the applicant respecting the use of stimulants and narcotics. Intemperance weakens body and mind, and increases the fatality of acute disease by lessening the powers of resistance, while many forms of chronic disease take their origin in the excessive use of alcoholic liquors and tobacco. Moreover, the statistics of life insurance show that intemperance reduces the average expectation of life nearly two-thirds. The most definite information on this subject is therefore required, and the Examiner should see that the answers to the questions relating to the use of stimulants and narcotics are clear and without ambiguity. The Company does not knowingly insure an intemperate person.

5. *Previous Attacks of Illness.*—The nature of these attacks, together with their severity, dates and duration, must be fully set forth.

6. *Insurance in other Companies.*—The kinds of policies are frequently not mentioned. They should be stated in every instance, and the length of term and dates of issue should also be given.

PERSONAL EXAMINATION.

This should take place in private, no third party being present. In making this part of the examination the Examiner will please observe the following rules and suggestions:—

1. *Height.*—State the height in stocking feet, by making proper allowance for the heel of the shoe. If the Examiner knows his own height exactly he can easily determine that of the applicant by comparison. But actual measurements are always preferred.

2. *Weight.*—In doubtful cases confirm the alleged weight by having applicant weighed anew. In cases of extreme underweight or overweight, ascertain whether the condition is a family characteristic; and if it is, have applicant write and sign a statement, giving approximate weights of father, mother, brothers and sisters.

3. *Chest and Abdomen.*—In measuring the chest and abdomen, and in examining the organs therein contained, remove the coat, vest and suspenders, and in doubtful cases remove all clothing.

4. *Respiration and Pulse.*—It is well to take the respiration and pulse at the beginning of the personal examination, as they are liable to become excited during the examination. Always count the pulse for at least one minute, otherwise intermissions in the beat may be overlooked. If the pulse-rate is over 85 or under 55, examine at another time.

5. *Surgical Operation.*—If the applicant has undergone a surgical operation, always mention the disease or injury for which it was performed.

6. *Vaccination.*—Satisfy yourself from the applicant's statements or by an examination of his arm, that he has been successfully vaccinated. Evidence of successful vaccination will be required in every case.

7. *Examination of the Urine.* *Physical and Chemical Examination to be made in every case.*—The Examiner will ascertain and record the color, specific gravity and reaction of the urine, the presence or absence of albumin and sugar, the nature of any sediment that may exist, and, indeed, any abnormality

that he may find. As a general rule, the necessary information may readily be obtained by the aid of chemistry and the naked eye.

On and after October 1st, 1888, the Company will require the specific gravity, reaction, and chemical analysis of the urine of every applicant.

A microscopical examination will be made only when the Local Examiner deems it advisable, or the Home Office specially calls for it.

When the Examiner makes a microscopical examination, he will please state his reasons for so doing.

Before testing the urine observe the following precautions :—

1. Satisfy yourself that the specimen presented was passed by the applicant, and whenever practicable, have him pass it in your presence.

2. Examine the specimen within twenty-four hours from the time it was passed.

3. Be sure that your test-tube is clean.

4. Be sure that your reagents are trustworthy.

5. Bear in mind that cases of advanced disease are not likely to be presented to you, and that abnormal elements, if present at all in the urine, are likely to be present only in small quantities; that, therefore, the examination should always be made with great care.

Albumin.—The best test is that by heat and nitric acid. If the urine is not perfectly clear, it should be filtered before the test is applied, and if it is not distinctly acid in reaction, a few drops of acetic acid should be added. Apply the test as follows: Fill a test-tube three-quarters full with the urine. Boil the urine at the top, that a comparison may be made with the portion below which has not been boiled; hold the tube against a dark background in a beam of sunlight. The slightest opacity indicates either albumin or earthy phosphates. If the cloud is phosphatic, it will disappear on the addition of a drop or two of nitric acid; if it is albumin it will remain unchanged by the acid.

Sugar.—Before applying the tests for sugar, albumin, if present in considerable quantity, should be removed by boiling and filtering.

Trommer's Test.—To a small quantity of urine in a test-tube, add two or three drops of a solution of sulphate of copper (1 to 10); then add a quantity of liquor potassæ equal to that of the urine, and then boil for half a minute. A yellow, yellowish-red or red precipitate will form if sugar is present. The boiling should not be kept up more than half a minute, inasmuch as by prolonged boiling many organic substances besides sugar are enabled to reduce the salts of copper.

Fehling's Test.—This is the most convenient test. The solution should be kept fresh and in a dark place. In using it, a small quantity should be boiled at first in a test-tube. If it remains clear after boiling, it is fit to use; but if a precipitate occurs, a fresh supply must be made up, or the old solution may be restored by adding a little more caustic soda. Having brought the solution to the boiling point, add the urine drop by drop. If sugar is present in any considerable quantity, the characteristic yellow or red precipitate will take place on the addition of one or two drops of urine. If no precipitate occurs, go on adding the urine until a quantity equal to that of the test liquor has been added; then bring the whole to the boiling point again, and if no precipitate forms, it may safely be inferred that no sugar is present.

Cast.—The examination for casts requires great care. Not less than four ounces of the urine should be taken and allowed to stand in a conical glass for at least twelve hours. A drop of the urine at the bottom should then be taken carefully by means of a pipette and placed upon the slide. The whole field of the slide should be studied, and the urine should not be pronounced free from the suspected casts until at least three drops have been taken and examined in this way.

CAUSES OF REJECTION.

The Company has no absolutely fixed rules respecting the rejection of applicants. Each case is decided on its own merits. The following grounds of rejection, however, are usually adhered to, some of them invariably:—

1. Paralysis in any form, except, perhaps, certain forms not dependent on disease of the nerve centres.
2. Vertigo, unless satisfactorily explained.
3. Total blindness.
4. Total deafness.
5. Suppurative disease of the middle ear.
6. Consumption, when three or more cases have occurred in the family.
7. Asthma, unless it be a simple "rose cold" or "hay fever."
8. Diphtheria, empyema, pleurisy and pneumonia, if recent or not fully recovered from.
9. Hæmoptysis within ten years.
10. The pulse, when irregular or intermittent, or when above 85 or below 55 per minute.
11. Dyspepsia.
12. Jaundice within a year.
13. Hepatic or renal colic within five years.
14. Gout within five years.
15. Articular rheumatism within a year or when several attacks have occurred.

It is expected that the Examiner will use his own unbiased judgment in accepting or rejecting an applicant. Whenever, for any reason, he believes that an applicant's chances for reaching old age are not good, he should decline the risk. In many instances, however, the question of an applicant's chances for long life is purely a question of heredity. If in doubt in such cases, the Examiner may approve the risk, explaining his doubts in a note, and referring the whole matter to the Home Office for decision.

In order to be accepted for the whole term of life, applicants should have at least a fair chance not merely of living out their "expectation," but of attaining old age. And the reason for this is obvious when we reflect that many of the insured will inevitably die before their term of expectation has expired, and that, therefore, many others must live beyond their expectation in order that the loss occasioned by the premature deaths may be counterbalanced.

It sometimes becomes apparent, before the completion of an examination, that the risk cannot be advised by the Examiner. In such cases the examination should be completed as usual, and its results fully recorded, as in the case of advised risks. The application, in such cases, will be forwarded to the Home Office by the Agent. The Company will not pay for a medical exami-

nation of which no record has been received at the Home Office, the application and accompanying Examiner's Report being the only evidence that such examination has been made.

The Company is pleased to receive communications directly from its Medical Examiners at any time concerning the cases which are brought before them. Information thus received will be held as absolutely confidential.

MICHIGAN MUTUAL LIFE INSURANCE CO.

DIRECTIONS FOR EXAMINING PHYSICIANS.

The Medical Examiner is earnestly requested to bear in mind that he is appointed for the protection of the Company, that the rates for insurance are based upon sound lives, and to recommend no other.

In answering the questions, he is also requested to be short and concise, and never convey a doubtful opinion.

Before making an examination the Medical Examiner should carefully read the application for insurance.

Questions regarding height, weight, etc., should be very carefully answered. If a man is much above or below the weight proportioned to his height, or has gained or lost weight rapidly, give all the facts in regard to the case. The average weight of men five feet eight inches is 148 pounds; with a loss of from three to five pounds for every inch below this to five feet, and a gain of about five pounds for every inch up to six feet.

The measurement of the chest should be taken under the vest. The average expansion is about three inches. Also be particular to note if there be any depression in the *infra-clavicular* regions.

The pulse being regular, should not be over 90 a minute, and it is suggested that the pulse be counted both before and after the examination, as the heart's action is very apt to be excited by it.

Refer to the special "Examination Blanks" of this Company:—

Question No. 1.—State whether robust or spare, erect or stooping, in answer to "Figure."

Question No. 4.—Is a very comprehensive question. If *hernia* be present, note whether single or double. *Fistula in ano* are of importance, generally indicating a bad condition of the system, and should reject the applicant.

Question No. 6.—Any severe surgical operation should be investigated, and its effects noted.

Question No. 8.—Can only be learned by questioning.

Question No. 9.—The general appearance of the applicant will answer this. An habitual user of distilled liquors or a hard "drinker" should be promptly rejected.

Question No. 10.—See applicant's family record.

Question No. 11.—Can only be answered after a very careful examination of the chest, in all its parts, and is really one of the most important questions the Examiner is called to decide upon. Any irregular respiration should always be very carefully noted.

Question No. 12.—Must be answered after questioning the applicant. The character of the *sputa* of a cough of any considerable duration must be noted, and the occurrence of the slightest hemorrhage should excite suspicion in the mind of the Examiner, and be looked over in all its bearings.

Question No. 15.—Demands very careful auscultation, both at the apex and base of the heart.

Questions No. 17 and 18.—Can generally be ascertained by the gait and manner of speech of the applicant, and by a few questions.

Questions No. 4, 11, 12, 13, 15, 16, 17, 18, 20 and 21 are very important, and should have the careful attention of the examining surgeon.

This Company instructs their agents to have examinations of applicants for insurance made only by medical examiners appointed upon the recommendation of this office.

When the Medical Examiner is absent or unable to make the examination, the alternate Medical Examiner may make the examination, an explanation of the facts accompanying the application.

Where no Medical Examiner has been appointed, a graduate of a reputable medical college, a physician of experience in his profession, regularly educated, and of the best reputation in the place, may be called upon to examine, and a blank called the Medical Examiner's Credentials should be filled out and accompany the application in every case. *No medical examination will be considered where these directions have not been complied with.*

The attention of Medical Examiners is called to the fact that their appointments are intended to be permanent, and it is expected that they will give a serious professional consideration to each examination and select only first-class lives from among those presented. Where there is any doubt regarding the propriety of accepting the applicant, it should be decided in favor of the Company. In cases where the unbiased opinion of the Examiner, from motives of personal interest or otherwise, cannot be given upon the application, a confidential communication may be reported to this office separately by the first mail.

The application in all cases should be carefully read, and any indefinite answers explained and corrected, such as "general debility," "breaking down," "died in the war," "exposure," "cold," "childbirth," "change of life," "dropsy," etc.

The inspection of the applicant should determine his complexion and expression; the freedom from puffiness of the face or feet, the absence of jaundice, the elasticity of gait, etc., etc. Nervous headaches, indigestion or dyspepsia, if reported as occurring, should be very carefully analyzed, as well as the habits regarding the use of alcoholic liquors.

In cases where the extreme chest measurements are less than three inches expansion, an explanation will be required from the Examiner, as few good risks show less than this amount.

A chemical analysis of the urine will be required in all cases where the applicants are forty-five years of age or over; in all cases at any age where the amount of insurance is \$5000 or over, and in all cases where in the judgment of the Medical Examiner it is, from the existence of headaches, dyspepsia, dropsy, pallor of the face, or from any symptoms of disease of the urinary organs, deemed advisable to make one.

The Medical Examiner will be expected to obtain the specimen at the time of the examination, so as to assure himself of the genuineness of the sample. This assurance is particularly necessary in those instances where there is any suspicion, from any symptoms or from the personal history, that there may be nephritic or cystic disease. The acidity or alkalinity should be determined

with litmus paper, and in case the urine is found alkaline a second sample should be tried, and if still found alkaline the reason should be given. The test for albumin should be made with heat and dilute nitric acid; the actual test made should be recorded specifically. The specific gravity should be tested by a float.

In every case where the quantity passed in twenty-four hours is found greater than normal, the test for sugar should be made, and in every case where the quantity is normal and the specific gravity is higher than 1026, and in every case where there is excessive thirst, or where the applicant passes the urine with undue frequency, or is obliged to rise at night to void it, a sugar test should be made (Trommer's test preferred).

The temperature of the blood taken by a fever thermometer, under the tongue, with the lips closed, will be required in each examination, and the actual observation must be recorded.

The following are some of the conditions recognized as requiring rejection by the Medical Examiner:—

CAUSES FOR REJECTION.

FAMILY HISTORY.—I. (a) Where both parents have died of phthisis.

(b) Where one parent has died of phthisis and where one or more brothers or sisters have died of phthisis, unless applicant is over thirty-three years of age and resembles physically the other parent.

(c) Where two cases of apoplexy (or paralysis) have occurred in the family.

(d) Where two cases of heart disease or two of insanity have occurred in the family.

(e) Where two cases of Bright's disease or two of cancer have occurred in the family.

PERSONAL HISTORY.—I. *Respiratory System.* (a) (Constitutional symptoms of phthisis); night-sweats; hæmoptysis; frequent pulse; shallow breathing; short hacking cough; pallor; general emaciation; prominent claviculæ and scapulæ; elevated temperature. (Physical signs), roughened breathing; prolonged expiratory murmur; unexpansive chest; dullness on percussion; persistent râles in apex of lung.

(b) Habitual cough; chronic bronchitis; pleurisy, or effects of (flattening on one side); asthma, within three years, or former history of; dyspnœa from any cause; pneumonia, two attacks of, if associated with phthisis or struma in the family; emphysema; undue frequency of respiration (above twenty-one per minute when quiet).

2. *Circulatory System.* Intermittent or irregular pulse; pulse above ninety or under fifty; heart disease of all forms with or without a murmur; very large varices extending above the knee; pulsating varices; aneurisms; atheromatous or calcareous (radial) arteries; great force of heart's action; marked feebleness of heart's action.

3. *Nervous System.* Previous apoplectic attack, or cerebral hemorrhage; paralysis, partial or complete of any member; epilepsy; vertigo; convulsions; insanity; mental feebleness or debility; insane temperament; attempted or threatened suicide; chronic otitis (shown by purulent discharge from the ear); severe chronic neuralgias of any form; blindness, deafness, or either

sufficient to produce a liability to accidents; dipsomania, in all forms; habitual tipplers, reformed drunkards, all who are accustomed to the daily or continuous use of distilled alcoholic liquors; spree drinkers, or those who avoid liquor for some weeks or months and then use it freely for a time; dispensers of liquors, and frequenters of places where it is used; habitual users of narcotics or opiates, as chloral, opium, etc., etc.

4. *Digestive System.* Dyspepsia, marked or chronic; frequent vomiting, hæmatemesis, enlarged or contracted liver; hepatic colic, within three years, or recurring attacks of; jaundice, postpone examination six months and if it is continuous reject; chronic diarrhœa; chronic dysentery; fistula in ano, within three years; bleeding hemorrhoids; hernia, unless truss is worn; large scrotal hernia; hernia, incarcerated or irreducible; stricture of anus or rectum.

5. *Urinary System.* Gravel or stone, at any time; stricture of urethra; cystitis; albuminuria; excessive quantity of urine with high specific gravity (over 1028); excessive frequency in urinating; diabetes, any form of; hæmaturia; Bright's diseases; nephritic colic, within three years, or recurring attacks of.

6. *General Chronic Cachexy.* Phthisical, strumous or scrofulous, chronic malarious, syphilitic cachexy; dropsy in any form or from any cause; acute articular (inflammatory) rheumatism, history of recurring attacks of; gout; rheumatic gout; cancer; fibroid tumors; tumors of all kinds; syphilis; constitutional syphilis, acquired, or hereditary; erysipelas, recurring attacks of.

7. *Physical Defects, Deformities, etc., etc.* Loss of a leg above the knee; spinal curvature, lateral or angular; hip disease, at any time; white swelling of knee, or strumous inflammation of any joint; necrosis; ulcers, psoas or lumbar abscess; abscesses and fistulas of all kinds; marked excess of weight; marked deficiency of weight.

LIMIT TABLE OF WEIGHTS AND MEASUREMENTS.

HEIGHT.	CHEST.	STANDARD WEIGHT.	UNDERWEIGHT NOT LESS THAN	OVERWEIGHT NOT TO EXCEED
5 feet.	33½	115 lbs.	98 lbs.	167 lbs.
5-1	34	120 "	102 "	174 "
5-2	35	125 "	106 "	181 "
5-3	36	130 "	111 "	188 "
5-4	36½	135 "	115 "	196 "
5-5	37	140 "	119 "	203 "
5-6	37½	143 "	122 "	207 "
5-7	38	145 "	123 "	210 "
5-8	38½	148 "	125 "	215 "
5-9	39	155 "	132 "	225 "
5-10	39½	160 "	136 "	232 "
5-11	40½	165 "	140 "	239 "
6 feet.	41	170 "	145 "	246 "
6-1	41½	175 "	149 "	254 "

MUTUAL BENEFIT LIFE INSURANCE CO.

INSTRUCTIONS TO MEDICAL EXAMINERS.

N. B.—The Examiners of this Company are responsible to the Company only, and all examinations, whether resulting favorably to an applicant or not, will alike be paid for.

The Company appeals to you, as in great measure the custodians of its interests, to realize the responsibility involved in every examination made, and looks to you for a just and true estimate of the applicant, not only as regards his present condition, but *as to his prospects* for reaching his expectancy.

To facilitate the making of such estimate, and to submit, as far as practicable, the large experience of the Company for guidance, the following rules and suggestions are offered :—

NOTE.—In order to complete its records, the Company requires the name of every person examined; and when a case is not advised or is postponed by you, forward the reason for your opinion, by mail, directly to the Home Office.

Please make your examinations *in private*, and have answers to all questions in the applications, free from ambiguity.

The terms “childbirth,” “effects of childbirth,” “change of life,” “accident,” “debility,” “acute disease,” “dropsy,” “worn out,” “asthma,” “sudden death,” etc., will not be accepted as causes of death without full explanation.

If ignorance of family history is urged, some proximate idea of causes of death should be gleaned and stated *by you as Examiner*.

Inquire particularly regarding the following points in the family record :—

1st. Have there been two cases of apoplexy, paralysis, heart disease or brain affection, or one of each pathologically akin?

2d. Have there been two cases of Bright's disease or cancer?

3d. Have any two members been insane?

The following points are of especial importance to a Life Insurance Company :—

I. HABITS.

The habits of an applicant as regards the indulgence in malt or spirituous liquors, opium or tobacco, have been found in the experience of the Company of great importance.

As you are aware, many of the diseases of vital organs are insidiously developed from this cause.

Please, therefore, question each applicant on the subject; and no matter what his asseverations (for the intemperate man rarely confesses his excesses), be assured that the liver, stomach, kidneys and nervous system are free from the tell-tale evidences of indulgence. The Company should always be informed when an applicant uses liquor daily, even if in moderation, and the quantity, whether of beer, wine or spirits.

II. COMPLEXION AND BUILD.

The physique and complexion are important factors in determining the prospects of an applicant: a flat chest, a pigeon breast, a protuberant abdomen, local muscular atrophy, disproportionate height and weight, excessive height, a stooping gait, a curved (angular or lateral) spine, are all serious evidences of impairment.

A waxen look of the ears, puffiness of the eyelids, peculiarity of speech, and the cachexia of cancer or scrofula, are too well known to you to be more than casually mentioned, but all such conditions should be clearly reported.

If the applicant's abdomen is larger than the chest, note and record the measurement; if fat, ascertain the rapidity of increase. Extreme fatness or leanness are significant, and should be stated under the head of weight. *Exact and not approximate measurements* are necessary. (See table of averages of height and weight.)

III. EXAMINATION OF URINE.

A microscopical examination of urine should be made in addition to the usual chemical tests, when the amount asked will make the total insurance in this Company \$10,000 or over (blanks will be supplied for this). If the applicant has been subject to headache or neuralgia, irritation of the skin without eruption, swelling of the feet or nausea, examination by microscope will usually be found necessary, and fee for same will be allowed if the Examiner certifies that such additional precaution is necessary; but in cases of *recent* renal derangement, of severe or suspicious character, and especially if there has been gravel, bloody urine or the cachexia of Bright's disease, the Company should not be put to the expense of even an ordinary examination of the applicant.

The following hints upon examination of the urine are submitted as a reminder of points frequently overlooked or forgotten:—

In testing for albumin remember that the cases most likely to be presented are those in which the albumin is in minute quantity.

Be sure that the urine is slightly acid, and if not so, add a little acetic acid.

Be sure of the cleanliness of the tube.

Boil the liquid *at the top*, holding it thereafter against a dark background in order to detect a very slight cloudiness. Allow the specimen to stand awhile if clear after boiling, and the same after adding nitric acid, as the cloudiness due to albumin may not always be immediately evident.

Heller's test for albumin should also be employed.

This is as follows:—

Place in a wide test-tube pure concentrated nitric acid to a depth of half an inch. Then add the urine with a pipette, drop by drop, carefully allowing it to run down the sides. A thin white line of demarcation will indicate the presence of albumin. (For rare exceptions, see authorities.)

In testing for sugar, Fehling's, or the fermentation test are preferred.

In using the former it is important to be sure that Fehling's solution itself gives no deposit on boiling.

The following evidences of impairment are a bar to insurance:—

1st. Asthma, within three years, except where produced by external causes

similar to that of hay or rose asthma, or by certain employments which have been permanently relinquished.

2d. Gravel or calculus within three years. If more than one attack, five years.

3d. Gall stone within five years.

4th. Consumption in the family, as follows:—

(a) Where more than three cases have occurred.

(b) Where the applicant is under 20 and one case has occurred.

(c) Where under 30, and a parent has had consumption (except for a 10-year endowment when otherwise favorable).

(d) Where under 35, and any two members have shown the disease.

(e) Where under 40, and both parents have had the disease.

(f) Where over 40, and both parents have had the disease (except for an endowment to terminate prior to his reaching sixty years of age, when the case is otherwise favorable).

5th. *Hæmoptysis*, whether slight or profuse, within ten years. (If a longer interval shall have elapsed, the Home Office shall decide according to the otherwise favorable conditions of the case.)

6th. *Empyema*, *pleurisy* and *pleuro-pneumonia*, if recent, or if their results are not entirely recovered from.

7th. Pneumonia, if recent and with a single case of consumption in the family. (If more than one attack shall have been experienced by the applicant, *five years* must elapse from the date of the last recovery.)

8th. Curvature of the spine, lateral or angular, recent or of long standing.

9th. Diphtheria, if recent.

10th. Dyspepsia, if the applicant has or is subject to it.

11th. Rheumatic gout within three years and gout within five years.

12th. Vertigo within two years, if the applicant is over forty. (In any case it must be clearly described, both as regards cause and character, that the Home Office may decide.)

13th. Dropsy, habitual cough, ulcers, fits, and organic diseases of liver or kidneys within seven years.

Paralysis from lesion of brain or spinal cord.

Intermittent or irregular pulse.

Rheumatism, acute articular, within one year.

Rheumatism, chronic or subacute, crippling or muscular; if recent, protracted or severe.

Discharges from the ear (recurrent or chronic).

Pulse habitually above 90 or below 50.

Hernia (unless a proper truss can and will be worn).

Hernia, irreducible.

Varices of extremities, extending above the knee or of unusual size.

Recent or existing fistula.

Inefficient vaccination.

THE FOLLOWING TABLE SHOWS THE EXPECTATION OF LIFE
FOR THE DIFFERENT AGES :

AGE.	EXPECTATION OF LIFE.	AGE.	EXPECTATION OF LIFE.	AGE.	EXPECTATION OF LIFE.
10	38	29.62	57	16.05
20	42.20	39	28.90	58	15.39
21	41.53	40	28.18	59	14.74
22	40.85	41	27.45	60	14.09
23	40.17	42	26.72	61	13.47
24	39.49	43	25.99	62	12.86
25	38.81	44	25.27	63	12.26
26	38.11	45	24.54	64	11.68
27	37.43	46	23.80	65	11.10
28	36.73	47	23.08	66	10.54
29	36.03	48	22.36	67	10.00
30	35.33	49	21.63	68	9.48
31	34.62	50	20.91	69	8.98
32	33.92	51	20.20	70	8.48
33	33.21	52	19.49	71	8.00
34	32.50	53	18.79	72	7.54
35	31.78	54	18.09	73	7.10
36	31.07	55	17.40	74	6.68
37	30.35	56	16.72	75	6.28

TABLE OF AVERAGES OF HEIGHT AND WEIGHT.

Ft.	In.	Lbs.	Ft.	In.	Lbs.
5	0	115	5	8	148
5	1	120	5	9	155
5	2	125	5	10	160
5	3	130	5	11	165
5	4	135	6	00	170
5	5	140	6	1	175
5	6	143	6	2	180
5	7	145			

NOTE.—In cases of great excess of weight or the opposite, a full and explicit statement will be required regarding the physique, general appearance and average weight during the past seven or eight years, together with information as to rapidity of loss or increase.

THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK.

INSTRUCTIONS TO THE MEDICAL EXAMINERS.

The Medical Officers of the Mutual Life Insurance Company of New York present the following instructions to its Medical Examiners :—

The Medical Examiner's relation to the applicant for life insurance is opposite to that which he occupies in his professional capacity. In the latter case the patient exposes his infirmities, and even intensifies them; the applicant for life insurance, on the other hand, may desire to lessen their importance or conceal their existence.


The Medical Examiner is the guardian of the interests of the Company. He is expected to furnish the Company, on its appropriate blanks, an explicit and truthful statement of the age and physical condition of the person proposed for insurance, and to revise the statements made in the application, with a view to demonstrating their correctness. For this reason *he receives a fee, whether the applicant be accepted or rejected.*

He should be careful to give a clear statement of the circumstances appertaining to each case. If any disease or disorder has occurred, name it specifically, avoiding such phrases as "urinary trouble," "kidney difficulty," "throat disorder," "complications," etc. These terms, conveying no precise information, produce an unfavorable impression as to the risk, and cause additional correspondence and delay.

The Examiner should report any local causes of disease which makes residents unhealthy, and also whether there is anything in the occupation rendering life insecure. Persons not unfrequently change their residence and business for sanitary reasons. Such reasons must be investigated.

If the applicant has ever applied, or been examined, for life insurance, and no policy issued, explanation of the reason for such non-issue of policy must be given, with date of rejection and name of company.

EXAMINATION OF THE PERSON PROPOSED FOR INSURANCE.

 *This must always be made in private and apart from the Agent.*

The Examiner should notice whether the age given corresponds with the appearance of the person, and when marks of premature decay are present, should report them. He should also notice whether the person be erect, well-formed, and of healthful aspect; and whether the height be in proper proportion to the weight.

If the applicant be *over* the standard weight, state whether it is caused by fat, or by development of bone and muscles; and whether the party is of active or sedentary habits. If, on the contrary, the person applying for assurance be *under* the standard weight, it is important to know whether his tissues be firm

or relaxed. In either case, state whether the underweight or overweight *is* or *is not* a family characteristic.

Defects of vision and hearing may be of serious import, either as of themselves impairing the risk, or as indicating disease of vital organs.

Any injury, mutilation or deformity must be reported.

The regular or occasional use of intoxicating liquors, tobacco or narcotics, needs special investigation, as experience has proved that habits of drinking, and the use of narcotic agents, have more influence in determining the probability of an individual attaining average longevity than any other factor in the problem of life insurance.

It is better to rate the pulse in the sitting posture, and note its qualities before the exploration of the chest shall have excited the circulation.

It often happens that from exercise or the taking of food or stimulants just previous to the examination, the pulse becomes rapid, unsteady or even intermittent. The use of tobacco, strong coffee, tea, or the loss of a night's rest will sometimes produce the same results. Always postpone such cases for subsequent examination, when the cause being removed, the circulation may be found normal. In case frequency alone be the objection, by prolonging the interview and diverting the applicant's mind from the immediate subject in hand, the pulse will become fuller and its frequency decrease.

The Examiner should exercise great care in his exploration of the thorax, remembering that he has probably only to detect the first symptoms of thoracic disease. No examination can be satisfactory that is made through the clothing; *the chest must in all cases be exposed, or, at least, only covered by the undergarment.*

The history of an attack of hæmoptysis should not be looked upon as accidental, unless distinctly coincident with some injury inflicted or some violent physical effort made at the time. It is often stated that the bleeding came from the gums or throat; but the presumption is always against this origin, and it must be proved to the satisfaction of the Examiner before the risk is approved.

Dyspepsia is sometimes a prelude to consumption or organic disease of the stomach or kidneys. Its nature should in all cases be inquired into and reported upon.

Symptoms of disease of the urinary organs (stricture, enlargement of the prostate gland, stone, etc.) should be carefully investigated.

In many instances predisposition to disease may be acquired from habits of life, occupation, exposure, accidents, unhealthy residence, previous attacks of disease, etc. It is the duty of the Medical Examiner to make a close examination of all the facts bearing upon such cases, and to state in the application, or in private letter to the Medical Officers, such modifying circumstances.

If the applicant has suffered from any recent severe attack of illness, postpone his acceptance until a sufficient time shall have elapsed to show his restoration to firm health.

THE FAMILY RECORD

is often carelessly reported, and the frequency with which parents, brothers or sisters die of "*old age*," "*exposure*," "*childbirth*," "*change of life*," "*don't know*," and similar ambiguous causes of death, has made the Company

desirous of getting *specific* information, unembarrassed by vague or unscientific terms, upon these vital points.

In some cases the applicant may be really ignorant of the diseases and even the exact ages of his near relatives. If so, let the Examiner state this fact.

Predisposition to disease is regarded under two aspects.

1st. Where the family history is such that the person may be considered predisposed to the disease of which his parents died—as, for instance, where the death of both was the result of consumption, insanity or so-called “scrofulous” disease; and

2d. Where one parent and a number of brothers and sisters or other relatives have so died, conjoined with personal predisposition to the disease.

In cases where one parent has died of disease, the predisposition to which in the offspring may be hereditary, the person, by reason of age, conformation, health and occupation, with an affinity to a healthy parent, may be fairly entitled to an endowment policy for a limited term of years.

Observe, also, hereditary or acquired tendencies to other diseases, especially rheumatism, heart disease, gout, cancer, Bright’s disease, insanity, *syphilis* and nervous diseases, as well as the general family tendency either to longevity or to death at an early age.

GENERAL REMARKS.

A general question should be asked, embracing all such diseases as may have been omitted or may be known to the person by other names than those given in our form of application. Many diseases of importance have been omitted (as malarial and typhoid fevers), which may have left serious impressions on the constitution; on the contrary, such diseases as smallpox and scarlatina, after complete recovery, tend to improve the risk.

Whenever a medical examiner postpones or declines an application, he will please write a confidential letter to the Medical Department of the Home Office *at once*, giving the person’s name, age, occupation, and the reason for his action.

If, for any reason, the Examiner does not wish to present in the application certain specific facts disclosed by the examination, he must write a confidential letter to the Medical Department at the Home Office, detailing such information. In this way nothing of importance affecting the risk need be withheld from the Home Office.

If information as to the present or past condition of the applicant be deemed necessary, it is desired that the Examiner procure it from the applicant’s attending physician in a professional way, with the understanding that it will be treated as confidential by the Company. Such information should be paid for by the Examiner as a regular office fee, and the amount thus paid communicated in a private letter to the Medical Officers, who will cause it to be refunded.

When the application is for \$30,000 or over the applicant must be examined by two regular examiners.

The rule governing the examination of the urine is as follows:—

The urine must be examined for sugar when the specific gravity is 1025 or over. Applicants for amounts under \$30,000 are to be examined by one Examiner, and no microscopical examination of the urine is to be made

except when required by the Company. Applicants for insurance amounting to \$30,000 and over require two physical examinations, two chemical examinations and one microscopical examination of the urine. Applicants for \$50,000 and over require a double physical examination, two chemical and two microscopical examinations of the urine. The urine thus examined must be passed by the applicant at different times.

WOMEN'S APPLICATIONS.

If the applicant is a woman, ascertain whether the functions of the reproductive system are normal.

Owing probably to the difficulty of ascertaining the peculiar physical history of women in their applications, the experience of life insurance companies is that they have not generally proved to be profitable risks. Consequently, it is necessary to make their physical examination with the greatest care.

In cases of pregnancy, postpone the application until a sufficient time has elapsed after delivery to indicate that the woman's constitution has not been affected.

RULES AND REGULATIONS.

1st. The Company's *latest issue of* blank form of application must be used in all cases, and every question fully answered.

2d. Applicants cannot be examined by Medical Examiners who are either their relatives or who may be directly or indirectly beneficiaries under the policy.

3d. *Applicants must be examined in the town where they reside or do business*, and by the Examiner regularly appointed and accredited to such town. When the Medical Examiner is himself the applicant, he must be examined by another Medical Examiner regularly appointed in the same or in a neighboring place.

4th. Particular attention should be paid with regard to writing out the full name of the person examined.

5th. The Medical Examiner's Report should be free from alterations, interlineations or erasures. When unavoidable, the same must be duly attested by the party entitled to make them, with date of such attestation.

6th. Medical examinations, to be accepted, must have been made within *thirty* days prior to the receipt of the application at the Home Office.

7th. The Company holds the Medical Examiner responsible for the identification of applicants, and he is instructed to make no examination unless the applicant is personally known or satisfactorily introduced to him. The same rule applies to persons presented for examination for certificates of health, which, in all cases, must be paid for by the applicant and must not be charged to the Company.

8th. A Medical Examiner who removes from the district to which he has been accredited, forfeits his appointment. He may, at the discretion of the Company, be reappointed for the district to which he has removed, provided there is a vacancy at that point.

9th. The Medical Examiner must invariably date his examination at the time when it was made.

10th. A Medical Examiner may solicit applications for insurance and participate in the commissions accruing therefrom under the rules of the General

Agency in which he resides, but he must, in every such instance, submit the applicant to another regularly appointed Examiner for examination. It is manifestly improper that he should act as Examiner and Agent at the same time.

11th. An Examiner who signs as witness to an applicant's signature should state the reason therefor, and whether he has any interest in the transaction.

12th. Considering them especially hazardous risks, this Company will not insure the following: Gamblers, bar-keepers, hotel proprietors who attend their own bars, keepers of saloons where liquor is sold, keepers of billiard parlors, or any individual who may be engaged in retailing alcoholic drinks or personally in the manufacture of the same; miners, day-laborers, engineers and firemen, whether of stationary or moving engines; men employed on any railroad train or in switching or coupling cars; men in blast furnaces, powder mills, fire-works or nitro-glycerine manufactories; balloonists, ordinary seamen, men operating in steam mills or in the vicinity of circular saws; divers or submarine workers of any kind.

It is respectfully suggested to the Medical Examiners that they should promptly notify the officers of the Company of every case where a policyholder may be violating the terms of the policy by vicious habits or otherwise in a way tending to shorten life. By compliance with this request unjust claims may be avoided.

FEEES.

1st. The fees for examination allowed by the Company, in each case will be paid by the Agent, and should be receipted for on the Company's blank. But, should the application be for *less than* \$1000, the fee must be paid by the applicant.

2d. The additional fee for a microscopical examination of urine—where required by the foregoing rules—will be the same as that allowed for the physical examination of the applicant.

3d. When examinations by two physicians are required (in cases between \$30,000 and \$50,000) but *one microscopical* examination of the urine shall be made, for which but *one* fee will be allowed, as per rule.

4th. But one fee will be allowed for any number of examinations of the same applicant made within thirty days.

5th. Medical Examiners will be paid only the regular fee for examinations. All extra charges, as for transportation, or going unusual distances, must be paid by the Agent.

6th. The Company will decline to pay for the examination of any applicant whose occupation is described in the foregoing rules as especially hazardous. The Medical Examiner must look to the Agent for his compensation where the applicant is so excluded.

7th. Bills for medical examination must be presented at the end of the current month.

RULES GOVERNING PROOF OF DEATH.

A. Specific information concerning *the habits of the late deceased*, in regard to the use of alcoholics and narcotics, must be furnished; and also the occupation must be fully stated.

B. When death is caused by disease of the brain, or from insanity, give the full particulars as to the cause and duration of the same.

C. In case of suicide, a certified copy of *the evidence and verdict before the Coroner* is required; and in all cases of sudden death from unknown causes, the particulars and results of all investigations held must be sent to the Company.

D. Certificates of the disease causing death must be furnished by the attending and consulting physician.

E. Every question must be distinctly and fully answered. The Company reserves the right to ask additional questions when necessary.

New York, March 12, 1890.

The following table is inserted for the convenience and information of the Medical Examiner:—

TABLE OF THE PROPER PROPORTION OF THE HEIGHT OF
INDIVIDUALS TO THEIR WEIGHT.

HEIGHT.	STANDARD WEIGHT.	20% UNDER WEIGHT.	45% OVER WEIGHT.	CHEST.
5 Feet,	115	92	167	33½
5 " 1 In.	120	96	174	34
5 " 2 "	125	100	181½	35
5 " 3 "	130	104	188½	36
5 " 4 "	135	108	195	36½
5 " 5 "	140	112	203	37
5 " 6 "	143	114	207	37½
5 " 7 "	145	116	210	38
5 " 8 "	148	119⅓	215	38½
5 " 9 "	155	124	224½	39
5 " 10 "	160	128	232	39½
5 " 11 "	165	132	239	40½
6 "	170	136	246	41

NATIONAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

1. All Medical Examinations must be made by our regularly appointed Examiners in the place where the applicant resides.

2. When the Examiner is himself the applicant the examination must be made by another regularly appointed Examiner in the same or neighboring town.

3. An applicant cannot be examined by an Examiner who is his relative, or who is any way interested in the issuance of the policy.

4. When the application is for more than \$10,000 two examinations are required.

5. The application must be received at this office within thirty days from the date of the examination.

6. The Examiner must date his examination on the day it is made.

7. The Medical Examiner has duties to perform which directly involve the welfare of the Company, and he is expected to perform them in a careful and conscientious manner.

His report should be full and exact, each question being definitely answered, and the answers free from alterations, interlineations or erasures.

8. The examination, except when the applicant is a female, should be conducted in private, and no matter how well known to the Examiner the person may be, or how vigorous his appearance, he should in every instance be thoroughly examined.

9. Owing to the fact that so many applicants endeavor to conceal their infirmities or to lessen their importance, it is a safe rule to regard every person as diseased until a complete examination proves him to be otherwise.

10. *Identification.*—The Examining Physician should make no examination until he is sure the party presented for examination is the person named in the application.

11. *Occupation.*—The occupation of the applicant must be fully stated in the report. Avoid indefinite terms, as "clerk," "merchant," etc., but state the particular branch of business.

In every case satisfy yourself that the applicant is not personally engaged in the manufacture or retailing of wine, spirits or malt liquors. This Company now regards such people uninsurable.

12. *Family History.*—As indications of the existence and character of hereditary influences, the health and duration of life of near relatives are important items. We seek for evidence of transmissible diseases in the grandparents, parents, uncles and aunts, brothers and sisters, and the children, if any, of the applicant.

These questions should be carefully answered, and in giving causes of death the specific disease should be elicited. Vague and unscientific terms, as "old age," "change of life," "exposure," "liver complaint," etc., should be avoided.

In every case state whether phthisis was or was not the cause of death.

13. *Personal Health*.—The questions regarding personal health should be asked and answered separately, and if there is a history of serious illness, its character, date of occurrence, and duration, with any injurious effects that may remain, should be definitely stated. Much correspondence and delay will be avoided if the Examiner gives precise answers to these questions.

The pulse should be examined in the sitting posture, its frequency, rhythm, volume, strength and tension being noted. When the pulse is found to be intermittent, irregular or unsteady, or when its rate is below 60 or above 90 per minute, postpone the case for subsequent examination and in your report state the condition fully and plainly.

The chest must be thoroughly examined for evidences of disease of the organs of respiration and circulation.

No examination can be satisfactorily made through the clothing. The chest should be exposed in every case.

14. *Habits*.—The habits, past and present, of the applicant, as to the use of alcoholics, opium and tobacco, should be determined. Avoid such terms as "moderately," "occasionally," "not to excess," etc., but endeavor to ascertain the exact amount of stimulants taken. Their frequent use should direct attention to the stomach, liver, kidneys and nervous system.

15. *Examination of Urine*.—The urine must be examined in every case. The color, daily quantity, specific gravity, reaction, and the presence or absence of albumin and sugar, are the essential points to be determined. If the specific gravity is found to be below 1010 or above 1030 a second examination should be made.

For the detection of albumin the nitric acid test (Heller's) and the heat and nitric acid test, where the proper precautions are observed, are sufficiently accurate.

Fehling's Solution, as prepared by Dr. Squibb, is a reliable test for sugar.

16. *Confidential*.—When the circumstances of the case are such that the Examiner hesitates to give his full estimate of the risk in the report, he is invited to correspond with the Home Office, where all communications are held strictly confidential.

17. *Rejection*.—Whenever the Examiner declines an application, or when he refuses to examine a man on account of family or personal history, he is requested and expected to write to the Home Office, giving full name, date of birth, where born and occupation, date of his unfavorable action and reason for same.

NEW ENGLAND MUTUAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

1. You will in every case act entirely in the interest of the Company, bearing in mind that upon you devolves the professional responsibility of protecting it against undue eagerness of agents to introduce doubtful risks for the sake of their commissions.

2. If you should chance to be the regular medical adviser of the person whose application is under consideration, you will state the fact, which should not, however, prevent an examination, unless objection is made thereto by either the agent or the applicant.

3. If an application on the life of a female is presented, you will make as thorough a personal examination as the circumstances will admit, and inquire in regard to any disease, or symptoms of disease, she may have had, peculiar to her sex, or to which she may be liable before attaining the age of 47 years.

4. If the person applying is a male of the age of 40 years or over, your attention will be particularly directed to the constitutional diseases of that period of life when the "tendency is to urinary diseases; to fatty degenerations; to cardiac and other obstructions from undue deposits, apoplexies, paralyzes, and the like." And it would be well in all such cases to present to the Company a clear view of your impression as to the muscular ability and vital force of the applicant, the rule being, that "when a person has aged beyond his years, the risk is greatly impaired."

5. Every fact bearing favorably or unfavorably upon the risk, whether of family record or personal history, should be mentioned, in order that strict justice may be done to the person applying, and no wrong inflicted upon the Company. If the person be over weight, or larger around the waist than over the chest, a fact due to the accumulation of fat or muscle, it should be mentioned, because an excess of fat may depreciate, while a predominance of muscle may improve, the character of the risk. If spare for his height, if hollow chested or stooping, or possessing any peculiarity, physical or otherwise (intermittent pulse, for instance), which may, in your opinion, have a bearing upon the risk as affecting its approval or rejection, you will be expected to state it.

6. For the purpose of ascertaining the existence of, or predisposition to, any hereditary disease on the part of the applicant, you will carefully investigate his or her family history, satisfying yourself among other matters that where "childbirth," "general debility," or "dyspepsia" is said to have been the cause of death, such was actually the case. This designation has sometimes been given ignorantly, or with design, when early deaths have followed pulmonary complaints or cancer of the stomach.

By the statistics of mortality nearly $\frac{1}{8}$ of all deaths are from "Consump-

tion;" and in the best regulated Life Companies of the country from $\frac{1}{4}$ to $\frac{1}{3}$ of the deaths are annually from the same cause; hence the importance of detecting those answers ignorantly or willfully made, which bear upon the value or depreciation of the risk.

7. Prior to every personal examination, you will direct the applicant's attention to the importance, of his carefully reading the questions, and the answers thereto, for it has been found that solicitors have imposed upon innocent parties by conveying to them the impression that the application was a mere matter of form.

8. You will make no personal examination in any locality where, from noise or interruption, the sounds of the heart and the respiratory murmur cannot be distinctly heard. Postpone, rather than make an imperfect examination; occasionally cases will occur where even two examinations must be made before a decided opinion can be given.

GENERAL REMARKS.

One of the questions in the certificate which you are required to fill with the results of your examination and investigation is this:—

"Is the person, in your opinion, as good a life for insurance as the average of persons of *the same age, who are of sound constitution, in good health, and whose family history is good*; and do you, acting in the interest of the Company, advise the acceptance of the risk?" (Please certify to this directly and specifically, *yes, or no.*)

The mistake which many Examiners make is in giving their opinion upon an entirely different average than that inquired about; one will say the applicant is as good as persons in general; another, that he is as good as the average of persons who apply for insurance; neither of which is the average the Company desires to obtain. Such answers throw no light upon the value of the risk, and present nothing reliable in the way of information. It is impossible that a medical man, unless he be in a position to examine every application that is made, can know what constitutes the average of persons applying for insurance, and so with the "average of persons in general," the same rule will apply in a greater or less degree according to the information which one possesses of mortuary statistics. But there can be no difference of opinion as to what constitutes the average of persons of the same age in sound health and of good constitution. By reason of thorough medical examinations, the lives that enter into a company are better than the general average; that is, the mortality among assured lives is less than that among the general population. The maintenance of this selection is the great security of Life Insurance Companies.

"If the Medical Examiner will bear in mind the great influence that *selection* has upon the lives of a company in general, he will not form his estimate of the risk lightly, nor give an answer to the important question above mentioned, without taking into consideration every fact which bears upon the case. A hasty decision made from a personal examination *only*, without taking into account the family record, or the diseases to which the applicant is subject, is productive of procrastination and trouble, if not of actual injury."

If you are aware of any facts, bearing unfavorably upon the risk, which you

may not care to notice in the certificate, you are at liberty to state them in a confidential note.

This Company will accept the examination of no physician who has not been regularly appointed for that purpose; and no Medical Examiner will be retained who is not found to be scrupulous and faithful in guarding its interests.

This appointment is subject to a revocation for satisfactory reasons.

NEW YORK LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.*

If, after any examination, the Medical Examiner decides to report adversely upon the case, he is requested, *before* he sends his examination to the Company or Manager, or delivers it to the Agent, to write the Company confidentially, giving the name, date of birth, and occupation and residence of the applicant, together with the reason for his unfavorable opinion; and blanks for such cases are sent every Medical Examiner with this pamphlet.

If, for any reason, the Medical Examiner prefers to do so, he is authorized and requested to send his reports direct to the Home Office; nor is it necessary that he should report or *disclose to any one the result of his examination.*

The following remarks are offered, not as medical instructions, but rather as practical suggestions to those among our Examiners who are not familiar with making examinations for life insurance.

They are not intended to prescribe in full the duties of Medical Examiners, but to point out the manner in which examinations may be most readily and effectively made. They should be regarded as a confidential communication from the Medical Department of the Company to each Examiner personally.

In return, our Examiners are requested to communicate directly and confidentially with the Medical Department at the Home Office of the Company, at any time and in all cases where, in their opinion, it is desirable or necessary.

Any information from them in regard to the climate, epidemics, hygiene or diseases peculiar to the localities in which they reside, will be welcome and highly appreciated.

LIFE INSURANCE—THE APPLICANT.

Life insurance is protection. It protects those dependent upon the insured from the financial loss involved in his untimely death; it relieves him from the pecuniary responsibility connected with the great uncertainty of human life by transferring that responsibility to the company in which he insures.

The business of Life Insurance is based on the fact that, while the longevity of a single individual is proverbially uncertain, there is a fixed law determining, within narrow limits, the average age at death of large numbers of individuals of the same age; and that, under this law, it may be expected that any man in sound health, of temperate habits, with a good family history and a healthful occupation, will live as long as the average of those of the same age, *i. e.*, will live out his "Expectation of Life."

Involving, as it does, the purely medical questions of the past and present health, the family history, the habits, hygienic surroundings and occupation of the individual, the Life Insurance business requires for its successful prosecution the assistance of those whose lives are spent in the study of such questions—Medical Practitioners; and because of the enormous sums of money involved,

* The matter here presented is a revision of the last edition of instructions issued by this Company.

and the dangers of fraud, it is necessary that the Medical Examiners of a Life Insurance company should possess, besides a good medical knowledge, the most upright character and sound judgment.

The chief essential to the success of a Life Insurance Company is the maintenance of a high standard in the selection of its risks. These should always be fully up to the average in health, of temperate habits, of good personal and family history, and of healthful occupation; and they should approximate closely to the average physical conformation of healthy men. Of the health, habits, history and occupation of an applicant for insurance, physicians are able to fully inform themselves; but the questions of average physical conformation or "build," and of the average probable longevity of an individual, so rarely present themselves for their attention, that the following tables will be found of convenience for reference:—

THE BUILD

of an individual (his height and weight) aids to determine his longevity, and it has been found that, other things being equal, his "Expectation of Life" is increased the nearer an individual approaches to the average proportions of height and weight, as they are given below:—

A man 5 feet 0 inches in height should weigh 115 pounds.

"	5	"	1	"	"	"	120	"
"	5	"	2	"	"	"	125	"
"	5	"	3	"	"	"	130	"
"	5	"	4	"	"	"	135	"
"	5	"	5	"	"	"	140	"
"	5	"	6	"	"	"	145	"
"	5	"	7	"	"	"	150	"
"	5	"	8	"	"	"	155	"
"	5	"	9	"	"	"	160	"
"	5	"	10	"	"	"	165	"
"	5	"	11	"	"	"	170	"
"	6	"	0	"	"	"	175	"
"	6	"	1	"	"	"	180	"
"	6	"	2	"	"	"	185	"
"	6	"	3	"	"	"	190	"

A considerable variation from these averages (as much as 20 per cent.) is not, however, incompatible with an average "Expectation of Life."

The following is the table of

THE EXPECTATION OF LIFE.

A man 20 years old may be expected to live 42 years, or until 62 years old.

"	25	"	"	"	39	"	"	64	"
"	30	"	"	"	35	"	"	65	"
"	35	"	"	"	32	"	"	67	"
"	40	"	"	"	28	"	"	68	"
"	45	"	"	"	24	"	"	69	"
"	50	"	"	"	21	"	"	71	"
"	55	"	"	"	17	"	"	72	"
"	60	"	"	"	14	"	"	74	"

The foregoing tables are given, not as arbitrary standards, but only to enable the Medical Examiners of the Company to GAUGE and RATE, from a Life Insurance standpoint, the risks which they examine.

MEDICAL EXAMINERS.

The Medical Examiners are selected solely for their moral and professional standing in the communities in which they reside. They hold their appointments direct from the Company, and retain their positions as long as their services prove satisfactory to it.

They are the trusted advisers of the Company, and their relations with the Medical Department are personal and confidential. It is their duty to examine every applicant for insurance presented to them by the Agents of the Company, to furnish, on blanks provided for that purpose, full and complete reports of the personal and family histories and of the physical condition of the applicants, and to give their opinion as to the value of the risks. For each of these examinations they receive a fixed fee, and this fee is paid whether the applicant is approved or disapproved by the Examiner. The fees are paid by the Company and not by the applicants or Agents; and the Examiners are in no sense dependent for their appointment, dismissal or their fees upon either applicants or Agents.

It is to the interest of all concerned that the relations of the Examiner toward both the applicants and Agents should be cordial and friendly. Toward the applicants for insurance his position is of the same delicate and confidential character as that toward the patients who entrust themselves to his professional care; and while it is often the duty of the Medical Examiner to oppose his judgment to the wishes of Agents by refusing to recommend some of the applicants for insurance, yet the Medical Examiner, by the exercise of tact and judgment, and especially by firmness in his convictions, ought to avoid all friction, and thereby secure that harmony so essential to a pleasant and profitable intercourse and to satisfactory business results.

To the Agents belong the task of securing applicants for insurance, thus bringing new business to the Company; and to the Medical Examiners that of selecting from such applicants only those risks which may be safely accepted by the Company.

In ordinary medical practice the patient endeavors to describe fully and clearly the history and every detail of the disease of which he complains, so as to give the physician a complete understanding of his condition. He conceals nothing from him, and the physician has only to consider the evidence before him and, rejecting that which is worthless, to act upon that which is reliable and of value.

In examinations for life insurance, on the contrary, the applicant wishes to appear well and strong. He declares that he is in sound health, and in all his statements as to his personal and family history, he is inclined to emphasize only those features which appear to him favorable to his case; and when the applicant is dishonest, he tries to mislead the Examiner, and so distorts the facts that it becomes very difficult to draw a correct conclusion from them. In short, a *patient* assists his physician; an *applicant for insurance* frequently antagonizes the Medical Examiner.

Therefore, besides the skill of the ordinary practitioner, the Examiner for life insurance must bring to his task complete independence of character, absolute integrity, and the tact to recognize all attempts at fraud on the part of applicants or others interested in the risk. He must constantly bear in mind that he is the guardian of the interests of the Company, and that upon his vigilance, judgment and integrity depend largely its success or failure.

MEDICAL EXAMINATIONS.

The medical examination of an applicant for life insurance has for its object to secure such information in regard to the family history and the past and present health of the applicant as will enable the Medical Board at the Home Office, assisted by the opinion of the Medical Examiner, to judge whether the Company may safely assume the risk of granting the insurance applied for. This object is best secured by following a routine which has been found by experience to produce the most satisfactory results. The steps in this routine may be illustrated by describing in detail the method of conducting *an examination at the Home Office of the Company*.

When an applicant presents himself for examination, or is brought by an Agent, the Examiner receives him with courtesy, takes him alone into his private office, provides him with a comfortable seat, and begins the examination by reviewing in detail the statements made in the application as to his full name, the date of birth, occupation, etc., and satisfies himself as to the identity of the applicant, and that the application is correctly filled out and properly signed.

Then the questions are asked as to the diseases from which the applicant has suffered, and the answers are fully and clearly set down. All obscurities in the history of any illness or disease are carefully investigated, until the Examiner is fully satisfied as to their importance and bearing on the probable longevity of the applicant.

The family history is inquired into, and here the Examiner is most careful to set down fully the age and condition of health of the living, and the age and cause of death of each deceased member of the applicant's family, especially in the direct line, and having always in view the importance of recognizing any hereditary disease.

This completes the "Declarations made to the Medical Examiner," and the paper is then signed by the applicant in the presence of the Examiner.

The Examiner then turns to the "Medical Examiner's Report," and sets down the full name, age and occupation of the applicant, and makes such other of the required memoranda as may be possible without disturbing him. During this time the applicant has remained quietly seated, and, assisted by the tact and courtesy of the Examiner, has overcome that nervousness so natural to any one when subjected to a medical examination.

While the applicant is thus seated at his ease, the Examiner notes the number and character of his respirations, and examines his pulse, observing its rapidity, volume and rhythm, and noticing especially the character of the vessels and the condition of their walls.

The applicant having then removed his coat and vest, the Examiner weighs him, and measures his height and the circumference of his chest and abdomen,

and, the clothing having been arranged for that purpose, proceeds to the physical examination of the chest. He notices the size and position of the heart, and carefully studies its action and the character of its sounds. He observes the character of the percussion note and of the respiratory sounds over every part of both lungs, and when he suspects any abnormality, in order to avoid possible error, requests the applicant, before continuing the examination, to remove such other portions of his clothing as may be necessary.

If the applicant has given a history of disease of any other organs of the body, the Examiner pursues his investigations until entirely satisfied as to their present condition, and carefully notes whatever changes he may have found.

Having completed the physical examination, he notes any scars or marks which would serve to identify the applicant, and selects and records the most striking and characteristic of them. At the same time, if there has been any doubt about the successful vaccination of the applicant, he carefully looks for a scar and satisfies himself on that point.

He now requests the applicant to furnish him with a specimen of his urine, and takes care that no deception is practiced, and that it is voided by the applicant himself.

This completes the examination and, while the applicant is readjusting his clothing, the Examiner reviews his report, to be sure that he requires no further information. He then courteously dismisses him, *referring to the details and the result of the examination, or not, as seems, in his judgment, advisable.*

Then, having made the necessary examination of the urine, he proceeds, at his leisure, to complete his report. He weighs deliberately all the factors in the case, and, having arrived at a conclusion as to the value of the risk, writes down his decision, recommending the applicant as "First-class," "Good" or "Fair," or refusing altogether to recommend the risk, as the results of his examination and deliberation require.

To prevent delay and the necessity for correspondence with Examiners, which will inevitably arise if they make mistakes or omit any important details in their examinations, the Medical Department submits the following

RULES FOR CONDUCTING EXAMINATIONS,

which must be carefully observed by the Medical Examiners of the Company.

1. *Privacy.*—The examinations shall be made in private, and no Agent or any third person allowed to be present.

2. *As to the Application.*—Before the medical examination is begun, the application blank shall be completely filled out, all questions answered and signatures affixed; and the Examiners shall see that the questions are perfectly understood by the applicant and the answers fully and truthfully made.

3. *As to Clearness.*—In both the "Declarations" and the "Examiner's Report," all questions shall be fully, clearly and separately answered, though as briefly as possible, and all doubtful points explained.

4. *Of Personal History.*—A positive statement shall be made of each of the diseases from which an applicant has suffered. All indefinite terms, such as "slight cough," "slight dyspepsia," "bilious headaches at times," etc., must be avoided. If worthy of mention, the disease must be fully described.

NOTE.—The utmost care should be taken to give a complete history of such diseases as rheumatism, gout or syphilis; the date of each attack, the character and severity of its symptoms, its duration and sequelæ, should all be fully set forth. The importance should be kept in mind of distinguishing chancroid from true chancre; and when there is a history of gonorrhœa, the presence or absence of a stricture of the urethra should be noted.

Whenever the Examiner is unable to fully satisfy himself as to the influence on the probable longevity of the applicant of any disease from which he has suffered, the Examiner should request the applicant to furnish the Company, on a blank provided for that purpose, a "Certificate of the Usual Medical Attendant" as to the disease in question, and, if possible, should attach such Certificate to his report.

5. *Of Family History.*—The details of the family history, especially with reference to hereditary diseases, shall be fully set forth. Such indefinite causes of death as "general debility," "change of life," "dropsy," "fever," "child-birth," "exposure" or "accident" must be avoided or, if given, must be so explained by the Examiner that the existence or non-existence of hereditary disease will be clearly established.

6. *Examination of Women.*—In the examination of women, the Medical Examiners shall be quite as thorough as in the examination of men, and in all cases they shall furnish, on the special blank provided by the Company, a separate report on the condition of the organs of generation.

NOTE.—The experience of most Life Insurance Companies with female risks has been unfavorable, chiefly because of a want of thoroughness in the examinations. The Medical Examiners of this Company should take care to avoid the possibility of such results.

7. *As to the Use of Alcohol.*—The past and present habits of the applicant as to the use or abuse of alcohol must be carefully and explicitly stated.

NOTE.—This is a question of FACT whose importance in Life Insurance cannot be overestimated. When the applicant is a stranger, the Examiner, by questioning and cross-questioning, ought to get at the exact truth; and when he is personally known to the Examiner, an incorrect answer is inexcusable. The Company never knowingly accepts risks on the lives of persons not habitually temperate.

8. *A Chemical Examination of the Urine* shall be made in all cases, and the Medical Examiner must satisfy himself that no deception is practiced upon him, and that the urine which he examines is that of the applicant.

NOTE.—A microscopic examination may be made whenever any features in the history or examination make it clearly necessary to the Examiner before he can decide as to the character and the risk. For such microscopic examination, carefully made and reported, the Company allows the Examiner an additional fee.

9. *As to Corrections.*—Whenever the Medical Examiner finds it necessary to make any corrections, interpolations or erasures, in either the "Declarations"

or "Report," he shall acknowledge each of them by placing opposite it his initials or signature.

NOTE.—A strict observance of this rule is necessary in order to avoid all doubt as to the authenticity of such corrections.

10. *The Decision of the Medical Examiner* shall be rendered only after a careful study of all the facts in the case, and, as the Company issues no form of policy on persons ill with any acute or chronic disease, such as bronchitis, emphysema, heart disease, albuminuria, or the like, he shall not recommend such persons for insurance, or shall recommend them only for a period safe to the Company, or shall be governed by Rule 11. Where the Examiner is in doubt, he must give the Company the benefit of such doubt.

NOTE.—Before giving his decision on any case, it is well for the Examiner to ask himself the questions: Whether he would, as a private individual, take precisely such a risk upon his own account, and would he himself insure the life of the applicant? And whether he would advise the Company to place hundreds of similar risks upon its books?

11. *The Decisions Need not be Announced.*—In any case where the Examiner thinks it necessary or desirable, or whenever his own business or personal relations with the applicant or Agent are of such a character that he does not wish to express fully in the examination papers his opinion of the risk, (a) he may forward all the papers direct to the Home Office instead of through the agent or manager; or (b) the Company will accept a supplementary report mailed to the Home Office. Such report, however, to be of value, must reach the Home Office BEFORE—CERTAINLY NOT LATER THAN—the application itself.*

NOTE.—On account of the complications which are liable to arise, it is requested that Medical Examiners avail themselves of this rule only when necessary for their protection, or for other special reasons.

For the convenience of the Medical Examiners of the Company, the following remarks are added in regard to

THE EXAMINATION OF URINE.

As quickly as possible after it is passed, the specimen of urine of the applicant for life insurance should be examined with respect to each of the following points:—

- | | |
|--|-----------------------------|
| 1. <i>Quantity</i> in 24 hours. | 4. <i>Reaction.</i> |
| 2. <i>Color.</i> | 5. <i>Transparency.</i> |
| 3. <i>Specific Gravity.</i> | 6. <i>Albumin or Sugar.</i> |
| 7. <i>Microscopical Appearances of the Sediment.</i> | |

1. *The Quantity* of urine passed by an adult in good health may be stated at about 45 to 50 ounces in 24 hours; but it is subject to variations within considerable limits, depending upon such conditions as the temperature and humidity of the atmosphere, the activity of the skin, the amount of the expiratory exhalations, and the amount of fluids or of liquid foods ingested.

* See also Special Notice.

In disease it varies from the enormous quantities passed in diabetes, in hysterical polyuria and in the amyloid and the old granular kidney, to the scanty flow of the febrile state and of some forms of disease of the kidneys.

2. *The Color* is usually a pale yellow or amber, though it varies with the quantity of urine voided. With a copious flow the color is very pale; with a scanty flow it may be very dark.

In disease it varies from the dark, smoky-brown of acute Bright's disease, through the high-colored urine of the febrile state, and the pale straw color of diabetic urine to the almost colorless urine of the hysterical state and some cases of contracted kidney.

3. *The Specific Gravity* of urine may be stated at 1020, under ordinary circumstances, although it may vary in health between 1010 and 1025, dependent upon the same causes as those which influence the variation in quantity and in color. Since the amount of solids excreted by the kidneys is fairly constant, this variation in specific gravity is approximately in inverse ratio to the amount of urine voided.

The specific gravity is best obtained by means of the urinometer. This instrument is usually graduated between 1000 (the specific gravity of distilled water) and 1060, and, when used, care has to be taken that it is perfectly clean and that it does not cling to the side of the vessel in which the test is made.

In disease this range is increased. In diabetes it may be 1040, 1050 or higher. In the earlier days of acute Bright's disease, and in the febrile state, it is high, and from that it ranges to that of the cirrhotic and the amyloid kidney, of diabetes insipidus or of the hysterical state, where the specific gravity may be 1005 or less. Since, however, urine with specific gravity 1010 has been found to contain sugar, and since the normal specific gravity has often been noticed in old cases of Bright's disease and in severe diabetes, the specific gravity cannot be relied on as an accurate guide to disease. But an average daily specific gravity of 1025 or over is always suggestive of the presence of sugar, and of 1015 or under of old Bright's disease.

4. *The Reaction* of normal urine is usually acid—due, probably, to acid phosphate of soda—but it may be neutral or alkaline.

The reaction is determined by the use of litmus papers. The red becomes blue in the presence of an alkaline urine, and the blue paper becomes red if the urine is acid. When the reaction is not well marked, both the red and blue papers should be used. The acidity of urine is increased by an albuminous diet, and vegetable foods decrease it or render the urine alkaline.

In disease the acidity is decreased in anæmia and in some nervous affections, and is increased in diabetes and fevers.

5. *Transparency*.—The urine is naturally transparent, but, within the limits of health, it may be more or less opaque on account of the presence of

(a) *Earthy Phosphates*,

(c) *Mucus*,

(b) *Mixed Urates*,

(d) *Bacteria*.

(a) The earthy phosphates may cause normal urine, at the moment it is voided, to be opaque. Shortly afterward they subside and form a bulky, flocculent sediment, with clear urine above. They may be recognized by the fact

that the application of heat will increase the opacity, while a few drops of nitric or acetic acid will cause it to disappear.

(b) The mixed urates often render a cold urine turbid. They subside quite rapidly and form a white or pinkish deposit at the bottom and on the sides of the containing vessel, much more dense in character than that of the phosphates. A gentle heat causes this opacity to disappear.

(c) *Mucus* from the genito-urinary tract may occur in sufficient quantity, within the limits of health, to cause some opacity in the urine. It forms a light, flocculent sediment, much like that produced by the phosphates, but which may be distinguished from the latter by the fact that alkalies, heat and strong acids have no effect upon it, while acetic acid increases the opacity by coagulating the mucin.

(d) *Bacteria*.—When a specimen of urine is allowed to stand for some time, especially in hot weather, it becomes opaque, on account of beginning decomposition and the development of bacteria. This change is important because it interferes with the delicacy of the tests for albumin, and it is on this account that a specimen of urine should be examined while fresh.

When it becomes necessary to examine for albumin a specimen of turbid urine, which is not rendered transparent by filtration, it should be treated by the method suggested by Hofman and Ultzman, which is as follows: Add to a portion of the urine, in a clean test-tube, about one-quarter its volume of liquor potassæ; boil the mixture, and filter. Should this filtrate be not quite clear, add one or two drops of magnesian fluid,* warm again and filter. This filtrate always appears clear and transparent. The presence of albumin may then be detected by the nitric acid test.

In disease, the urine may be opaque on account of the presence of—

(a) *Pus*.—This forms a deposit which often resembles that of the urates. It is distinguished from it by the fact that heat increases the opacity of purulent urine, and from phosphatic deposit by the fact that it is not cleared up by the addition of a few drops of acid.

(b) *Decomposition*, as in old cases of cystitis, in which the urine contains bacteria, pus, mucus, epithelium and, perhaps, shreds of disorganized tissue.

(c) *Fat*, as in chylous urine. Fat is recognized by the well-known power of ether to dissolve it.

6. (a) *Albumin*.—The presence of albumin in the urine is always suggestive of such grave pathological conditions that its recognition becomes one of the most important features in the examination of urine. Many tests have been brought forward for this purpose, and have had their earnest advocates, but those which have become most generally recognized for simplicity and effectiveness are the nitric acid test and the heat test.

The Nitric Acid Test.—Into a clean test-tube about half an inch of pure, colorless nitric acid is poured. The test-tube being then held at a considerable angle, a quantity of clear urine is allowed to flow from a pipette slowly down the inclined side of the tube, until an inch of urine overlies the acid. This

* The formula of the magnesian fluid is as follows: Magnesium sulphate and ammonium chloride, of each one drachm; liquor ammoniæ, one drachm; distilled water, one ounce. Mix.

must be carefully done, so that there shall be no mixture of the acid and the urine. The presence of albumin is indicated by a sharp, white band or zone of coagulated albumin in the urine AT the line of contact of the acid with the urine. In order to recognize this band, where the amount of albumin is small, the tube should be held in a good light against a dark background. Sometimes this zone of coagulated albumin develops very slowly, and it is, therefore, always well to look at the specimen again 15 minutes after the test is made, having placed it carefully aside for that purpose.

Errors.—A specimen of urine which contains a large amount of urates may show a whitish zone above the line of contact. This is caused by the formation of acid urates, and is distinguished by the fact that the zone is not so sharply defined as that formed by albumin, but fades gradually into the clear urine; also, because it disappears on the application of a gentle heat.

The presence of resin, not unusual after the use of such drugs as balsam of copaiba, turpentine, etc., produces a whitish zone similar to that produced by albumin. The addition of a few drops of alcohol will redissolve the resin.

The Heat Test for Albumin.—A clean test-tube is filled about two-thirds full of slightly acid urine. To the upper part of this urine, heat is applied by means of a spirit-lamp. If, when the urine has boiled, any diminution of transparency is noticed, it is due to albumin or the earthy phosphates. If to the latter, a few drops of acetic acid will cause the opacity to disappear; if to albumin, the addition of the acid will have no effect.

Error.—If the urine is slightly turbid from decomposition and the presence of bacteria, any delicate change in the opacity cannot be seen, and it must be filtered before applying the heat. If, after filtration, it still remains turbid, it should be treated according to the suggestions already made under 5 *d*, BACTERIA. If the specimen is alkaline, acetic acid should be cautiously used, and if strongly acid, liquor potassæ may be added, so as to render the urine only slightly acid.

If albumin is not found in a specimen of urine subjected to both of these tests, it may be safely affirmed that it is not present.

(*b*) *Sugar.*—Although many excellent authorities maintain that the presence of a small quantity of sugar in the urine may be entirely physiological, yet it is so often the first evidence of diabetes that its recognition is of the utmost importance in examinations for life insurance.

Of the various tests which have been devised for this purpose, the copper test—as in the form of Fehling's Solution*—and the bismuth test, deserve special mention.

* Fehling's Solution is made after the following formula: 34.64 grammes of c. p. sulphate of copper are dissolved in 200 grammes of distilled water; 173 grammes c. p. neutral tartrate of soda are dissolved in 500 grammes of sodic hydrate of a sp. gr. 1.12, and to this alkaline solution the copper solution is slowly added. The mixture is then diluted to one liter. The solution is made and sold by all the large drug houses. Perhaps the best preparation is that put up by Dr. E. R. Squibb, of Brooklyn, N. Y., and the Medical Examiners of the Company are requested, whenever possible, to use this preparation.

Whenever it is impossible to obtain a reliable preparation of Fehling's Solution, a fairly good substitute for qualitative work may be made as follows: 1 drachm of sulphate of copper, 2 drachms of neutral tartrate of potash, 3 ounces of liquor potassæ. Mix. Keep this closely corked and in a cool, dark place. It is to be used as detailed above for Fehling's Solution.

The composition of *Fehling's Solution* is based upon the fact, not only that sugar has the property of reducing the oxide of copper to a lower state of oxidation, but also that a definite quantity of the former will react upon a known quantity of the latter (1 c.c. of Fehling's Solution is reduced by .005 gram of sugar), and it is equally useful for qualitative and quantitative analysis.

It is an alkaline fluid, of transparent, deep blue color, somewhat easily decomposed* by exposure to the air and to light and warmth, therefore requiring, for its preservation, to be kept in small, closely-stoppered bottles, in a cool, dark place.

The Test.—A small quantity of the solution is poured into a clean test-tube, diluted with two or three times its volume of pure water, and boiled for a few seconds over a spirit-lamp. If the mixture becomes turbid, or a yellow or brick-red precipitate forms, it has probably been kept too long or has been improperly prepared. If, however, the mixture retains its transparent, deep blue color, it may be relied upon, and the test is proceeded with. To the hot mixture the urine is added, drop by drop, and heat is occasionally applied, until a volume of urine has been added equal to the volume of the mixture. If sugar is present in quantity, the first few drops will usually cause a yellow opacity to appear, which spreads through the mixture, changing slowly to red as it settles to the bottom of the test-tube. A small quantity of sugar causes this reaction to take place more slowly. If no reaction takes place, the urine, clinically speaking, is free from sugar.

Errors.—*a.* The urine must be fresh. A small quantity of sugar may fail to cause the reaction in an ammoniacal urine.

b. Albumin interferes with the reaction and must be removed before the test is made. This may be done by heating the urine, previously rendered only faintly acid, and filtering it. Care must be taken not to boil the specimen too long.

c. The changes produced by the earthy phosphates must not be confounded with the sugar reaction. The former produce a flocculent precipitation in the midst of a transparent, greenish amber fluid.

The *Bismuth Tests* are based upon the fact that the action of sugar upon the bismuth salts is the same as upon the salts of copper. They have the advantage over the copper tests of being less sensitive to the decomposing power of other organic compounds.

The Test which is ordinarily employed (Boettger's) is conducted as follows: The urine is mixed with an equal volume of liquor potassæ or sodæ, a small

* To avoid the tendency to decompose which characterizes the alkaline solutions of copper, a very excellent plan is to prepare the copper solution separately, and to mix them when the test is made.

The following formulæ furnishes such a solution:—

R.	Sulphate of copper,	4.3 grammes	
	Distilled water,	62.5 c. c.	M.
R.	Tartrate of soda and potash,	21.5 grammes	
	Soda,	7.5 “	
	Distilled water,	62.5 c. c.	

Mix exactly equal parts of these solutions, pouring the copper solution slowly into the alkaline solution.

quantity of bismuth subnitrate is added, and the mixture is boiled for a short time. If sugar is present, insoluble black oxide of bismuth is formed and deposited on the sides of the test-tube; or if the quantity of sugar is small, the white bismuth powder becomes tinged with gray.

Errors.—Only a very small quantity of bismuth should be used, as an excess of bismuth, if the amount of sugar is small, may conceal reaction.

If albumin is present in the urine, a reaction due to the formation of the black sulphide of bismuth may take place, which resembles that produced by sugar, and may be mistaken for it; the albumin, therefore, should be removed from the urine before the test is made.

Another Test, which is very satisfactory, is that recommended by Nylander, in which bismuth is used in solution.* The test is conducted as follows: To a small quantity of this solution in a clean test-tube, heat is applied, and urine is slowly added until the quantity of urine added is equal to the quantity of the solution used. If sugar is present, the mixture becomes slowly clouded, and turns gradually darker until, if sugar is present in considerable quantity, it becomes wholly or quite black. When the quantity of sugar is very small, the reaction is much less distinct.

To insure greater certainty in all doubtful cases, both the bismuth and copper tests should be employed.

7. *Microscopical Examination.*—The apparatus necessary for the microscopical examination of the urine are: (1) a conical glass, very broad at the top and very narrow at the bottom, of a capacity of 4 fluid ounces; (2) several cut-glass slides; (3) a few thin cover-glasses; (4) a pipette; (5) a microscope with two objectives, $\frac{2}{3}$ " to 1" and $\frac{1}{4}$ " to $\frac{1}{5}$ ", two eye-pieces, and a good concave mirror for illuminating the field. The urine to be examined is allowed to stand from six to twelve hours in a conical glass, carefully covered from the air and dust by means of a piece of glass or cardboard. A few drops of sediment are then taken up in the pipette and transferred to a clean slide placed upon the stage of the microscope. With the low-power objective, the field is carefully searched for epithelial, blood or pus cells, mucus, renal tube-casts or other pathological bodies. Generally, the presence of these may thus be detected. If not, or where the character of the sediment requires further study, one or two drops are taken up in the pipette, transferred to a fresh slide, covered with a clean cover-glass, and with the high-power objective—and, if necessary, the second eye-piece—the study is continued. These procedures are repeated several times, so that a large amount of sediment may pass through the field of the instrument. An examination thus conducted ought to reveal anything of clinical importance in the sediment.

Whenever there is any special reason to suspect pathological changes in the genito-urinary tract, not revealed in the first examination, it is well to make

* The formula of this solution is as follows:—

R.	Bismuth subnitrate (c. p.),	2 grams or \mathfrak{z} ss
	Potassii et sodii tartrat. (c. p.)	4 grams or \mathfrak{z} j
	Liquor sodii hydrat. (10 per cent. solution in distilled water),	100 c. c. or \mathfrak{z} xxvii.

Dissolve by the aid of gentle heat and decant. Use the supernatant fluid.

several subsequent examinations at intervals of a few days, but such extended and repeated examinations must not be made at the charge of the Company.

In conclusion, we submit these suggestions for the consideration of the medical gentlemen to whose hands, as its Medical Examiners, and as such its confidential advisers, the Company entrusts the grave responsibilities of their position, with the hope and belief that they will sustain in the future, as they have in the past, the honor of their profession, and ably protect the interests of the New York Life Insurance Company.

NORTHWESTERN MASONIC AID ASSOCIATION.

INSTRUCTIONS FOR OUR MEDICAL EXAMINERS.

In order to protect our Examiners, we have divided our blank applications in two parts, so that the portion containing the Medical Examiner's report is mailed by him directly to this office, and not passed over to the scrutiny of the solicitor. In addition, we send out confidential reference blanks to from three to five of the applicant's acquaintances; so that it is impossible for the applicant or the solicitor to positively fix the responsibility of a rejection on any one. A vast deal of annoyance in regard to rejected applicants is due to the disappointment or partisanship of thoughtless solicitors; hence the importance of our present method of not allowing them to see the doctor's report. It would be a good plan to impress upon applicants the fact that rejecting is done at the Home Office, and that we have other means of information than your report.

When a man makes application for membership in a mutual assessment company, he does it with a distinct understanding that he must come up to the standard required of applicants, in order to gain admission. So when the physician, contrary to his better judgment and in a spirit of indifference, recommends a poor risk, he does injustice to many other members by contributing thus far to the disintegration of an organization that is doing great good. While physicians experienced in the practice of their profession are best fitted to examine for life insurance, the physician that has skill and experience in life insurance examinations is better fitted to practice his profession, on the old principle that "you must understand health before you can understand disease." It is by comparing the applicant to the normal man that you, in your mind's eye, determine his ability to attain his expectancy.

Don't lose sight of your first impression regarding a risk, nor let the circumstance of finding him better than you expected put you off your guard in passing on his fitness as a risk. Although family and personal history, habits, occupation and location are important factors to be considered in the summary of every case, the plain, practical, common-sense question: Can I conscientiously, on my professional honor, recommend this applicant as a sound, healthy man, likely to live out his expectancy, and could I, in the interest of the Company, recommend twenty like him? is the test to decide your fitness for the position of medical examiner.

Familiarize yourself with copy of our blank application enclosed. Form A is to be filled by the solicitor, and signed by the applicant. You should always look at this to see whether or not his age, occupation or previous history of rejection, as given under the head of "Risks not Acceptable," precludes your examination of him. In form B you record applicant's answers and explanations to questions in the first person. In writing his answers down do not use ditto marks, but write plainly "yes" or "no;" and remember, a copy of this is sent him with his certificate, so it is important to give the answers correctly and explain even what seems to be trivial. Witness his signature to this part of the blank. Following form B on the application proper you will note blank for the

Examiner to record personal description of applicant, pulse rate, etc., and should be filled while he is present. The Examiner's report should be filled and mailed immediately after the departure of the applicant, while the points in his examination are still fresh in your mind. Do not postpone or neglect it, because we cannot act on the application or credit your fee until this is received. Remember, your report is confidential and must be forwarded by you.

It is always desirable that examinations be conducted in your office and in private; not in the presence of the solicitor or others. Remove the coat and vest; and if you do not deem it necessary or expedient to strip the applicant, throw his suspenders off his shoulders and roll the starched or upper shirt under his chin. You can now conveniently note contour and expansion of his chest and examine heart and lungs. You have already ascertained his family and personal history, and can give close attention to any suspicious indication. For instance, to the lungs if there is personal history of pneumonia or pleurisy, or family history of consumption; to the heart if there is a history of rheumatism or heart disease; to the liver and stomach if an habitual user of alcoholics or a chronic victim to malaria.

Please note carefully our list of risks not acceptable, as we cannot pay for the examination of such, unless the solicitor has the consent of this office to have an exceptional case examined. Also read carefully the list of those whose acceptance is questionable, as you will be expected to give full and explicit explanations. Attach additional sheet of paper if you have not room to write on the blank portion of the application and report.

RISKS NOT ACCEPTABLE.

Masons who have reached their fiftieth birthday, and non-masons who have reached their forty-sixth birthday; saloon keepers or wholesale liquor dealers who keep any kind of a bar in their place of business; locomotive engineers and firemen; members of fire departments in large cities; tug-men; members of life-saving crews; fishermen on sea or lakes; miners; common sailors; switch-men; yard-men; conductors or brakemen on freight or construction trains; those handling explosives; those known to be notoriously intemperate; persons under thirty who have lost a parent or one or more brothers or sisters by consumption; persons who have had spitting of blood within ten years; persons who have been rejected by this Association or by any life insurance company within two years.

QUESTIONABLE RISKS.

The following diseases or conditions are serious objections to insurance, and, in most cases, causes for rejection. Applicants who have had rheumatic fever or gout within one year, or several attacks during life; persons who have ever had spitting of blood; persons who have had fistula or chronic ulcers, if not perfectly healed more than two years; those who have had any form of cancer, dropsy, habitual cough, fits, vertigo or organic disease of heart, liver or kidneys; those who have had gravel within three years; those who have curvature of spine; those who have been subject to asthma, other than hay fever, within three years; persons who draw pensions on account of disease or

present physical disability ; intermittent or irregular pulse, or when the pulse is below 55, or where it remains for half an hour above 90 ; purulent discharge from the ear ; urethral stricture or enlarged prostate ; double hernia and single hernia in a subject who cannot and does not intelligently manage a truss, and where the occupation is unfavorable ; persons who have had apoplexy, paralysis, epilepsy, tertiary syphilis or delirium tremens ; those in whom there is a personal history or suspicion of insanity, or where there is a marked hereditary or family tendency to this disease, or to suicide, especially from father's side of the family ; persons who are 20 per cent. under weight, especially if they have lost near relatives by consumption ; those who are 30 per cent. over weight, especially if they are fat and have lost near relatives by heart disease or apoplexy, or are themselves high liver, of sedentary occupations.

SPECIAL SUBJECTS.

1. *Consumption*.—Although it is generally considered that after 35 years of age persons of consumptive families are less liable to the disease, and while this is true to a certain extent, it is by no means a safe rule. Hence the importance of careful selection at any age. The proportion of deaths from consumption seems to be greater among those who have lost brothers or sisters by the disease than where they have lost a parent or grandparent. Always ascertain the age of applicant at the time of parents' death ; also, as near as you can, the age at which an uncle or aunt may have had the disease, and whether on paternal or maternal side. Where there have been deaths from pneumonia, bronchitis, change of life or childbirth, obtain full history, so that we may determine whether or not it is another name for consumption. In regard to any hereditary disease, ascertain at what age in parent's life the disease was developed, and if applicant was born before or after the manifestation of disease in the parent.

2. *Cancer*.—In case where an applicant has lost a relative, even a parent, from cancer, if you can exclude any predisposing tendency to consumption, you can pretty safely ignore any hereditary tendency to cancer among the male members of the family.

3. *Apoplexy, Heart Disease and Centric Paralysis*, for convenience, may be classed together, and can probably be found traceable to hereditary influence in about one-third of the cases. Any history, either past or present, also any tendency, such as recent vertigo, intemperate, rheumatic or gouty history, overweight, high living with deficient exercise for any length of time, or such influences as may lead to fatty degeneration of vital organs or atheromatous changes in the blood vessels, associated with a suspicious family history, will reject. If you find with the above conditions a feeble circulation and respiration, with history of general debility or rapid obesity, you may suspect fatty degeneration or urinary disease ; and if an extremely hard pulse, with overweight and intemperate or rheumatic history, you may suspect atheromatous changes. This I believe to be the explanation of a good many of our deaths that are put down to unknown, obscure or complicated causes. And when Examiners report on their professional judgment and impressions, even in the absence of tangible reasons, notwithstanding applicant may have what the laity term a robust appearance, they will surely become the guardians of the

companies employing them, and we will have fewer deaths among recent applicants from such indefinite causes as paralysis of the heart, angina pectoris, general debility, congestion, dropsy, etc.

4. *Vertigo*.—Where there is a history of vertigo, be thorough in your investigation as to its origin. We have had more than one death from apoplexy where the Examiner was positive that a previous vertigo was caused by a digestive disturbance. Bear in mind that in centric or brain vertigo, the surrounding objects seem to move, and closing the eyes relieves this symptom, while in the reflex variety, when the eyes are closed the patient himself seems to move. However, in either kind, well-marked cases of recent occurrence would better be postponed if applicant is past 40 years of age.

Bright's Disease and Diabetes.—As heretofore, we are still convinced that we are justified in leaving urinalysis to the judgment of our Medical Examiners, believing that in the very great majority of cases there is something in applicant's appearance or personal history that will suggest its advisability to the alert physician. Chiefest among the indications are a dry, harsh skin, anæmia, pallor, œdema of face or extremities, any appearance or history of weakness, nervous exhaustion, over-work, irritability of temper, loss of virility, frequent headaches, disordered vision, excessive thirst, excessive or scanty uris. For practical purposes, where there is no marked indication of disease, it will be sufficient to take the specific gravity and apply the albumin test of heat and nitric acid, which can be done in five minutes' time, with very little inconvenience and no expense. If specific gravity is found to be too high, or there is cloudiness in the albumin test, apply other tests, and secure another specimen of urine; before testing for albumin, if urine is not of acid reaction, render it so by the addition of a few drops of acetic acid. The Examiner is expected to use the test with which he is most familiar; but in addition to the well-known tests of Trommer, Fehling, Haines, etc., you will find Neidlander's Bismuth test a very pretty one, though not so delicate. Prepare as follows: Subnit. bismuth, 30 grains; Soda et potas. tartrate, 1 drachm; Liq. potas. [U. S. P.], 3 ounces. Mix and filter. Boil thoroughly a small quantity of the urine with equal part of the solution, and if sugar be present the mixture will turn a dark brown or black color.

SUBJECTS DEMANDING SPECIAL CARE, INQUIRY AND EXPLANATION.

Where the applicant's occupation is considered hazardous.

Where there has been a rapid increase of weight, or a recent decrease.

Where the abdominal measurement is greater than that of the thorax, or where the applicant cannot easily get two inches chest expansion.

When the family history shows hereditary diseases of any kind.

When the applicant has had any severe or recent illness, or when there is a history of general debility or nervous prostration.

In cases where the applicant presents any deformity or has undergone any surgical operation.

Where an applicant has ever had syphilis or stricture.

Those who have had asthma, or who are subject to malaria.

Where the applicant has a rapid pulse, especially if he has ever had rheumatism.

In cases where the applicant receives a pension.

Where the applicant habitually or daily uses malt or spirituous liquors, or those who occasionally spree, although they say they do not use it to excess.

And such other points as are suggested by applicant's appearance, and family and personal history that would, in your professional judgment, aid us in passing on the risk.

TABLE OF HEIGHTS AND WEIGHTS.

HEIGHT.		AVERAGE WEIGHT.	30 PER CENT. ADDED.	20 PER. CENT. REDUCTION.
Feet.	Inches.			
5	3	130	169	104
5	4	135	175	108
5	5	140	182	112
5	6	143	186	114
5	7	145	188	116
5	8	150	195	120
5	9	155	201	124
5	10	160	208	128
5	11	165	214	132
6	...	170	221	136
6	1	175	227	140

THE FOLLOWING TABLE SHOWS THE EXPECTATION OF LIFE
FOR THE DIFFERENT AGES.

AGE.	EXPECTATION OF LIFE.	AGE.	EXPECTATION OF LIFE.	AGE.	EXPECTATION OF LIFE.
10	38	29.62	57	16.05
20	42.20	39	28.90	58	15.39
21	41.53	40	28.18	59	14.74
22	40.85	41	27.45	60	14.09
23	40.17	42	26.72	61	13.47
24	39.49	43	25.99	62	12.86
25	38.81	44	25.27	63	12.26
26	38.11	45	24.54	64	11.68
27	37.43	46	23.80	65	11.10
28	36.73	47	23.08	66	10.54
29	36.03	48	22.36	67	10.00
30	35.33	49	21.63	68	9.48
31	34.62	50	20.91	69	8.98
32	33.92	51	20.20	70	8.48
33	33.21	52	19.49	71	8.00
34	32.50	53	18.79	72	7.54
35	31.78	54	18.09	73	7.10
36	31.07	55	17.40	74	6.68
37	30.35	56	16.72	75	6.28

SAMPLE COPY OF MEDICAL EXAMINER'S CONFIDENTIAL REPORT.

On the examination of _____ *made at* _____ *State*
of _____

1. Has applicant any predisposition to hereditary disease?
2. Has he any predisposition to acquire disease?
3. Is his heart's action *perfectly* normal?
4. Does his pulse intermit or become irregular?
5. Are his lungs sound and healthy?
6. Is there any evidence of asthmatic or bronchial difficulty or tendency thereto?
7. Is there any evidence or suspicion of Bright's disease, cystitis or diabetes?
8. Does he show evil effects of habits?
9. Have you ever heard or suspected that he was at any time intemperate?
10. Is he too lean or too fat?
11. Is there any appearance or history of disease of brain or nervous system?
12. Does he appear older than he is?
13. Are his chances of long life, in your opinion, first-class, fair or doubtful?
14. On your professional honor, and in the interest of the Association, do you recommend him for membership?

Specific Gravity, Acid or Alkaline, Albumin, Sugar,

Sign

Medical Examiner.

Graduate of

Medical College, 18

Date of this examination

188

NORTHWESTERN MASONIC AID ASSOCIATION.

To

M. D., Dr.

To above examination, \$

NORTHWESTERN MUTUAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO THE MEDICAL EXAMINERS.

The success of a Life Insurance Company depends largely on the ability, integrity and faithfulness of its Medical Examiners. Much reliance must, of necessity, be placed on their statements and judgment.

The same professional pride and integrity which actuates the practitioner of medicine in performing his duty to his patient, should be displayed in his examination of an applicant for Life Insurance. He can with no more impunity hazard his reputation as an Examiner for Life Insurance, by careless and indifferent examinations, than he can, by the same means, arrive at a false diagnosis and prognosis in the case of a private patient. Consequences of the latter mistake are well known to the profession, and by reason of the system of interchange of the causes of rejection of applicants by Life Insurance Companies, the former will prove equally as disastrous to his reputation.

The relation of the physician to his patient differs from that of the Examiner to the applicant for Life Insurance. As a rule, the patient will voluntarily expose and perhaps magnify his infirmities, while with the applicant for Life Insurance the tendency is to lessen their importance or suppress their existence.

A conscientious and faithful Examiner will be on the alert to detect any deception on the part of an applicant.

He will not record an answer to a question until he is fully satisfied that the answer given by the applicant is a full, fair, and true answer to the question.

Such an Examiner will, under no circumstances, permit personal friendship for the applicant or Agent to influence him in giving the Company a fair and candid opinion as to the desirability or undesirability of each subject he examines.

GENERAL REMARKS.

In accepting the position of Medical Examiner for this Company, we trust you will appreciate the responsibility of such office. You are the guardian of the Company's interests in the locality for which you are appointed, and should endeavor to do all in your power to aid the Medical Department in its desire to accept only healthy and otherwise desirable subjects, bearing in mind the important fact that insurance tables are based on healthy lives. None other, under any circumstances, should be recommended for insurance.

In forming an opinion as to the desirability of a risk, it is not only necessary to know that the applicant is free from disease, but that he is also free from any tendency thereto. His family and personal history are important factors, and form the basis for an opinion by the Medical Directors, as to whether a policy should or should not be granted. Hence the importance of a full, complete and impartial report bearing on these points.

Your examination should be thorough, no matter how well you may know the applicant, or how vigorous he may appear. You should exercise great

care in the exploration of the thorax. In all cases insist upon the chest being bared, or at least covered only by the undergarment.

It is presumed at this office that when a subject is recommended, you have determined, to your entire satisfaction, by whatever additional means you may deem necessary to employ, that the applicant is free from disease and its effects. You should, after you have completed the application and your examination, but before you dismiss the applicant, read over the answers to the questions carefully, and for the time being commission yourself Medical Director of the Company, assuming for the moment you know absolutely nothing of the applicant or his family, except the knowledge derived from the statements made in the application and your examination.

Would that knowledge be sufficient to enable you to pass intelligently on the risk? If not, what further information would you require? By supplying that information by further questioning the applicant (who is still within your reach), you will enable the Medical Director of the Company to act promptly, save correspondence, delay and annoyance to yourself, the applicant and all concerned.

Apart from the results of your technical examination, what general impression does the applicant make upon your professional eye? If unfavorable, you should explain the impression under "Additional Remarks," and if of sufficient import, you should decline the risk, even though you can find no definite flaw in the applicant to account for it, remembering you alone have the applicant before you, and that the Medical Director of the Company has nothing to guide him except what is stated on the application, or by letter.

In all doubtful cases, the Company should invariably be given the benefit of the doubt.

FAMILY HEALTH RECORD.

1. In many instances you will find the applicant unable to give the specific cause of death of some member or members of his family, but you can by *judicious questioning as to symptoms* determine in most cases the true cause of death, or at least that the disease was or was not organic in its nature.

2. Death from the following causes, occurring in the *parents, brothers, sisters, uncles, aunts and grandparents* of the applicant, have an important bearing on the case, and should invariably be recorded, viz., *Consumption, scrofula, epilepsy, insanity, brain diseases, gout, rheumatism, cancer, syphilis, etc.*

3. If an *uncle* or *aunt* has died of any of the above-named diseases, be particular to state whether on the paternal or maternal side. When a member of the applicant's family has died of some obscure disease, be particular to draw out the fact as to whether phthisis was or was not an element of the disease.

4. In recording length of time sick, no idea is given as to the real cause of death by simply stating how long the party was confined to bed, *but the length of time the symptoms of the fatal illness were present should be stated.*

5. In many instances it will be necessary for you to postpone an examination to enable the applicant to ascertain the true cause of death of members of his family.

6. It is desired to have the family record complete in all cases, but it is especially important in subjects under thirty years of age.

PERSONAL HEALTH RECORD.

I. *Occupation and Residence*.—Is the risk affected by anything in his residence or occupation?

II. *Appearance*.—Is there anything unfavorable in his general appearance? Any evidence of too free use of stimulants or of former sickness, or cachexia indicating disease of any kind?

III. *Eruption*.—Does the skin show any evidence of former syphilis, any sores, ulcers, or skin eruption present, or indication of disease of the bones?

IV. *Otorrhœa or Otitis*.—Any history of otitis or otorrhœa? If so, has he any discharge at present, or has he ever had?

V. *Hæmoptysis*.—The history of an attack of hæmoptysis should be fully explained. It should not be looked upon as accidental, unless coincident with some injury inflicted, or some violent physical effort made at the time it occurred. The statement that it came from the throat or gums should be fully proved to the satisfaction of the Examiner before the risk is approved.

VI. *Urinary Organs*.—Symptoms of disease of the urinary organs, such as catarrh of the bladder, stricture, enlargement of the prostate, calculus, gonorrhœa and frequent or excessive micturition, should be fully investigated.

VII. *Colic*.—State whether hepatic, renal or intestinal.

VIII. *Rheumatism*.—Any history of acute articular rheumatism? If so, be particular to state the number of attacks, in what years they occurred, their severity, parts affected, etc. With such a history a most careful examination of the heart must be made. Two attacks, if the last one was recent, render the risk doubtful.

IX. *Amputation*.—State whether the amputation was from disease or injury. If from disease, be particular to state its nature. If of lower extremities, state what portion was removed, and whether the party is able to wear an artificial limb.

X. *Vaccination*.—Be particular to search for evidence of successful vaccination. Lack of same imposes a special clause in the policy contract reading as follows:—

"It is provided and agreed that the within named — is not insured by this policy against death by smallpox or varioloid, or in consequence of having had either, unless a certificate from one of the approved Medical Examiners of the Company, satisfactory to the Company, shall be furnished at its Home Office, that the person whose life is hereby insured has been successfully vaccinated; in which case the Company will assume the risk of death by smallpox or varioloid."

XI. *Urine—Examination of*.—The urine should be voided in your presence to enable you to know positively that the specimen examined is that of the applicant. You should test for sugar and albumin in every sample you examine, no matter what the specific gravity may be. If in previous examinations either has been found, if only a trace, this fact should appear on the application.

AGE.

It is contrary to the rules of the Company to date an application back for the purpose of giving the applicant the benefit of the premium rate for a year younger than the actual age. It would be unjust to the other members, apart

from its untruth, and in violation of the provision of the charter of the Company requiring uniformity in premium rates, and *must never be done under any circumstances.*

To illustrate: The applicant's age is 40 years, 6 months and 3 days. By the rule of the Company he would be required to pay the premium for age 41, which, on a twenty-payment life policy for \$10,000, is annually \$400 70
By dating the application back three days, he would secure the insurance at age 40, at an annual premium rate of 389 20
Difference annually \$11 50

The difference, with compound interest, in twenty years would amount to between \$450 and \$500.

This gain is at the expense of the other members who pay their full premiums.

Medical examinations made by a near relative, or one who has any pecuniary interest, directly or indirectly, in the policy, are not accepted. "Near relative" includes cousins and others of closer blood relationship.

GENERAL RULES GOVERNING EXAMINATIONS.

1. *Date.*—You must invariably date your examination on the day it is made. If for any reason you are unable to complete it at once, state the cause of the delay under "Additional Remarks."

2. *Examine in Private.*—The examination and that portion of the application written by you must be filled out in private, with no one present except yourself and the applicant.

3. *Attestation.*—The answers in the application should be free from alteration, interlineation and erasure. When unavoidable, the same must be attested by the applicant's initials. Likewise corrected or changed answers in the examination must be attested by you. No one except the applicant has the legal right to change any of the answers over his signature.

4. *Identification.*—*You are held responsible for the identification of the applicant.*—You should refuse to make an examination, unless the applicant is personally known to you or satisfactorily introduced. The same rule applies to persons presented for examination for certificate of health for the restoration of a lapsed policy, which in all cases must be paid for by the applicant.

5. *Family History.*—In giving the cause of death, elicit the specific disease. Such terms as "exposure," "effects of cold," "childbirth," "change of life," "fever," etc., will not be accepted by the Company without an explanation.

When members of the applicant's family are said to be in "fair" or "poor" health, the application must show the cause of the ill-health.

In all uncertain causes of death, the report should, if possible, state whether phthisis was or was not an element of the fatal illness.

6. *Personal History.*—Each question in number 15 must be read over separately by the Examiner and answered by the applicant "yes" or "no." It often happens that hæmoptysis, fistula, and various other ailments there enumerated, are forgotten by candidates unless specifically inquired about. Question 23 must be answered explicitly, showing when he last consulted a

physician, and for what. "I have never been seriously sick," or "Not consulted one for a long time," and the like, do not properly answer the question and *cannot be accepted*.

7. *Habits*.—Be particular to draw out all the facts in regard to the present and past habits of the applicant as to his use of stimulants. If he has over-indulged, have him state over his own signature to what extent he has been intemperate, and when last under the influence of stimulants. If abstemious, have him state how long he has been a total abstainer. *The answers on this point must be definite and convey a clear idea as to the past and present habits of the applicant.*

8. *Measure and Weight*.—You should measure the applicant in every case, including shoes; light weights and heavy weights should be accurately weighed, including their ordinary clothing. In either case state whether the overweight or underweight is or is not a characteristic of the father or mother, or both?

9. *Adverse Opinion*.—Whenever you postpone or do not recommend a risk, or should you give an adverse opinion on a risk, or decline to examine the applicant because of foreknowledge of his ineligibility, you are required to communicate the fact at once to the Medical Department at the Home Office, on proper blanks furnished by the Company, or by letter.

10. *Postpone*.—You should postpone the acceptance of a risk who has recently suffered from a severe attack of illness until sufficient time has elapsed to insure perfect restoration to health.

11. *Confidential Information*.—If for any reason you should prefer not to state in the application certain facts disclosed by the examination, you should at once write a confidential letter to the Medical Department, giving in detail such facts. Nothing affecting a risk should ever be withheld from the Home Office. Correspondence with respect to an applicant is always considered confidential.

FEES OF MEDICAL EXAMINERS.

1. A fee of five dollars will be allowed in all cases where a test of the applicant's urine is required (*viz.*, applications of \$2000 or over, and when the applicant is over 45 years of age).

This fee is allowed whether the applicant is recommended for insurance or not, and will be paid by the Agent, and should be receipted for on the Company's blanks.

2. An additional fee of five dollars will be allowed for the microscopical examination of the urine, *provided a request for such examination has been made by the Medical Department of the Home Office.*

3. But one fee will be allowed for any number of examinations of the same applicant made within thirty days.

4. Only the regular fee for examinations will be paid. Extra charges, as for transportation or going unusual distances, must not be charged to the Company.

5. The Examiner should present his bill at the end of the current month, plainly and legibly made out on the Company's blanks, with but one name on a line and properly dated.

6. When Examiners are partners in business, each one must send bills for his personal examinations. No firm signature can be accepted.

APPOINTMENT AND REMOVAL.

Medical Examiners are appointed by the Medical Directors of the Company, and are accountable only to the executive officers at the Home Office.

They will not be removed except for cause. Among others, the following will be deemed sufficient cause for dismissal :—

1. Failure to date the examination the day it is made.
2. Failure to make the examination in private.
3. Failure to notify the Medical Department promptly when an adverse opinion has been given, as per instruction 9 above.
4. A lack of adequate professional skill and experience, independence, responsibility, and a courteous readiness to respond to calls to make examinations.

THE PENN MUTUAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO MEDICAL EXAMINERS.

The Medical blank, for examination, used by this Company, differs in many respects from those that you have been accustomed to use, and we desire to call your attention to this matter in order that the modification will give us all as little trouble as possible.

The Medical Examiner will read the questions to the applicant, and write the answers as given. The applicant will sign this, and it will form part of his application for insurance, or, in other words, his contract with the Company.

In filling up these questions please write distinctly, give full particulars in as condensed a form as will be possible for a full understanding of the case. Should any additional remarks from you concerning the case seem needful, write them on that portion of the sheet which is exclusively for the use of the Medical Examiner. Do not, under any circumstances, give *your* opinion of the case upon any of the paper *above* the applicant's signature. *That part is a legal contract and is entirely his.*

Complete your paper as soon as you have finished the examination of the applicant, read it over carefully so that no questions may be unanswered, show it to no one, but mail it directly to the Medical Director. Should you deem it advisable to give more information than you can place upon the Medical blank, write it out in full on a letter sheet and send it with the paper.

Your correspondence will be confidential, and it will give us pleasure to support you as the representative of the Medical Department of this Company at all times, provided you, in return, will do your utmost to aid us in selecting risks of a desirable character, whose habits and occupations and social surroundings will give them every prospect of completing their expectation of life.

Always express your candid opinion as to whether or not we should accept the risk, at the same time bearing in mind that there are certain matters which are to be left to the judgment of the Home Office, such as questions of overweight, or underweight, occupation, moral hazard, family record, etc. In such doubtful cases we wish from you all facts that will aid us in reaching an early decision.

Our business is an increasing one, and we have, of course, to manage it upon business principles; therefore, we hope that you will endeavor to follow out such instructions as have been formulated in order to expedite our work; and that you will endeavor, also, to aid our Agents in every way, knowing that individuals are not always easy to convince as to the importance of insuring and may change their minds unless treated courteously and examined at once.

Policies will be written on approved applications upon the lives of men for the following amounts:—

Under age 21, not over,	\$ 5,000
Between ages 21 and 24 (inclusive), up to,	15,000

Between ages 25 and 29 (inclusive), up to,	\$20,000
“ “ 30 “ 55 “ “	30,000
“ “ 56 “ 60 “ “	20,000

(Of which \$5000 is to be Endowment Insurance, maturing not later than age 70.)

Between ages 61 and 63 (inclusive), up to, 10,000

Over age 63, not over, 5,000

All persons accepted under the age of twenty-one years will be charged the rate for that age.

The age is calculated from the nearest birthday.

The limit for various ages upon such *female* risks as may be acceptable (the rates being the same as those charged men) is as follows:—

Age 18-21,	\$2,500
“ 21-30, inclusive,	5,000
“ 31-50, “	10,000
“ 51-55, “	20,000
“ 56-60, “	15,000
“ over 60,	5,000

The following women are not insurable:—

1. Those under 18 years of age.
2. Married women until the birth of a child, or until 5 years after marriage.
3. Pregnant women.
4. Women nursing their children.

Women Medical Examiners will be appointed in all cities as rapidly as consistent with proper selection by our Medical Director, also in any town where sufficient interest in the insurance of women is developed.

Extra Premiums.—The following are annual extra rates per thousand dollars of insurance charged upon occupations considered more than ordinarily hazardous, viz.:—

Stationary Engineers and Iron Ore Miners,	\$ 2.50
Express Agents and Baggage Masters on Railroads,	5.00
Masters, Mates and Clerks on Lakes, Rivers and at Sea in Temperate Latitudes, and Engineers on Steamers,	5.00
Engineers on Railroads,	10.00
Mail Agents,	5.00

No extra premiums for climate risk is charged officers of the United States Army and Navy. An extra premium, not exceeding three per cent., will be charged in time of war, which amount, if not paid in advance, does not invalidate the policy, but becomes a lien thereon.

No risk will be taken upon women unless there is insurable interest in the life.

The following classes are considered as uninsurable, viz.: gamblers, saloon-keepers, bartenders, hotel proprietors who attend bars, those personally engaged in retailing or in the manufacture of alcoholic stimulants, coal miners, firemen on locomotives, freight conductors, freight brakemen or those engaged in switching or coupling cars, manufacturers or handlers of explosives, divers or submarine workers, balloonists.

The following rules have been adopted to guide the Medical Examiners, and it is requested that they will be carefully read, in order to avoid a lengthy correspondence with the Home Office and a delay in the issue of the policy.

1. You will please examine the applicant at your earliest convenience after receiving the signed application from the Agent, and mail your paper to the Home Office without delay. Should you desire to postpone the completion of your paper, inform the Medical Director at once of the delay and its cause.

2. We require all our examinations to be strictly private; no person to be present but the Examiner and the applicant. The questions on the first half of the examination blank are to be written by the doctor (at the instance of the applicant, who warrants their correctness and offers them as a consideration of the contract). The Examiner must not be a near relative of the applicant nor of the Agent. He must not be the beneficiary nor in any way pecuniarily interested in the policy.

3. When the examination is completed, the *application*, having been read by the Examiner, is to be returned to the Agent, and *the Examiner's report* is not to be shown to any one, but is to be mailed by the Examiner to the Medical Director at the Home Office.

4. Make all necessary inquiries that suggest themselves to you in reference to family history, previous diseases and habits, *especially in regard to the use of alcoholic stimulants in the past and at present*, a note of which you will please make in your paper. Much delay and unnecessary correspondence frequently results from hastily written papers, especially when the cause of death of near relatives is given as "childbirth," "pneumonia," "exposure," etc.; or when the applicant in his personal history alludes to attacks of "severe bronchitis," "nervous prostration," "neuralgia,"—matters which may be of no importance, or again, may seriously affect the expectation of life of the individual.

The Medical Examiner will please note these carefully, and if necessary obtain an explanatory statement, *attested by the applicant*, which will save time and trouble.

5. Please also see that the applicant has been successfully vaccinated; examine for evidences of hernia in cases that are supposed to be cured, or if a rupture exists, see that a properly fitting truss is worn.

6. In all cases for policies of *over* one thousand dollars (\$1000) the urine is to be examined by heat and nitric acid *for albumin* and the *specific gravity* taken, and the Examiner should in each case satisfy himself that the urine he examines is that passed by the applicant. For this, including the ordinary examination of the applicant, the fee will be \$5.00. The specific gravity is required in all cases. For \$1000 and less, or where the total amount of insurance carried in this Company does not exceed \$1000, no urine test is required unless the Examiner thinks it necessary. For these cases the fee will be \$3.00.

In all cases of insurance reaching five thousand dollars (\$5000) and upward, the additional test of the urine for sugar (either Fehling's or Trommer's) will be required without additional fee. In all cases of less than \$5000 should the Examiner (owing to high specific gravity, gouty diathesis, phthisis, or diabetes in the family history) suspect sugar, he is expected to test for it, and note

the result upon his examination paper; when the specific gravity is below normal, the Examiner will make several tests for albumin and report the results of each.

7. Medical Examiners will please fill out the memorandum attached to each examination blank, without receipting it, and after a number of examinations have been made, checks will be sent from the Home Office in settlement of the accounts.

8. The Medical Department is only authorized to pay the ordinary fees as mentioned above and an extra fee for a microscopic examination of the urine when ordered by the Home Office. No extra or traveling expenses are paid unless specially authorized by the Home Office.

9. Please *measure* the applicant, in every case. *Overweights and underweights* should always be accurately weighed by the Examiner.

10. It is especially requested that the Examiner will read over the examination paper after it is completed by him, before he mails it to the Home Office, as accidental omissions of important matters cause correspondence and delay.

11. The ordinary examination of an applicant holds good for thirty days, after which a medical certificate of health is required before a policy is issued. Health certificates are paid for by the applicant.

12. The medical portion of the examination blank contains only those questions which are presumed to be sufficiently important to place the Examiner in a position to detect any disease, or disorder, which would affect the longevity of the applicant. They can be but suggestive, and it is presumed that when a risk is *recommended* the Examiner has determined, to his entire satisfaction, by whatever additional means he has deemed it necessary to employ, that the applicant is *free from disease or the effects thereof*.

13. *The selection and appointment of Medical Examiners is made directly by the Medical Director.* We desire to have *two* active Medical Examiners in each place where we do business; the one to take the place of the other in case of absence, and both to act when more than \$10,000 insurance is applied for (in which case two examinations are required).

We have instructed the agents of the Company that, if they find themselves at a place in which we have not before done business, and where we have no regularly appointed Examiner, they can employ such physician to make examinations for us, who has been recommended *in writing* by our nearest Examiner; provided, that they cannot communicate with the Home Office. Any Examiner called upon to make such a selection, will please bear in mind that the interests of the Company are at stake, and that we wish only educated and reliable Examiners. It is requested of any Medical Examiner of the Company that when called upon by any Agent for a written or telegraphic recommendation of a physician to act as Examiner, he will only suggest the name of one who is either personally known to him, and in every way well qualified for the position, or one whose reputation for *sobriety, honesty, and medical attainment* is beyond dispute.

PHCENIX MUTUAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO THE MEDICAL EXAMINERS.

Your most careful consideration is requested to the following remarks and suggestions:—

An application for a policy of life insurance is framed with a view of showing two points respecting the applicant: First, whether there is anything in connection with his physical condition which will militate against longevity; and, second, whether any circumstances connected with his family history will be likely to affect unfavorably his constitution and strength.

It is exceedingly important that the Examiner shall consider these points together. The figure, in connection with the family history, will frequently be of vital importance in determining the desirability of the risk. It is therefore desired that the Examiner shall read the questions which are put to the applicant, and the answers which he makes, before entering upon the examination of his person. He will in this way, before he makes his examination, become familiar with the condition, occupation and family history, and can make his examination accordingly, paying attention to such points as may be necessary. There has been placed in the application an expectation table, for the purpose of calling your attention to the length of time which the insured must live to enable the Company to successfully conduct its business. It is expected that any person to whom a policy is granted will live at least the number of years indicated by this table, and if for any reason the probabilities are against this, the Company does not desire to issue a policy. It is desired and expected that the Medical Examiner will be wholly independent of the Agent, for unless his opinion can be given without bias, it cannot be one upon which we can rely, nor its value what we expect. It will therefore be esteemed a favor if any Examiner will communicate directly with the Company on any point concerning which he does not wish for any reason to enlarge in the application itself. We shall always be glad to correspond with you about any matters concerning which you desire information or advice, and ask for your candid opinion in each case which may come before you.

An inspection of our losses has shown that the use of liquor causes, either directly or indirectly, many deaths, and this is a point about which we wish to be informed particularly, so far as your observations go. If the applicant is known to you to be addicted to any pernicious habit, we desire to be informed directly by you, and all such information which we may receive may be regarded as strictly confidential. It will be well to bear in mind that the mortality among the members of any Company cannot be excessive and that Company live and prosper. No care in the management in other respects can make up for a lack of prudence in the selection of members. The future welfare of the Company is thus largely dependent on your skill and judgment, and it is entitled to your best and most careful opinion, which shall lean to the side of caution in cases of doubt.

In deciding at the Home Office upon the acceptance of applications for Life Insurance sent from agencies, great reliance must necessarily be placed upon your statements and opinions. You are justly considered, in an important sense, the guardians of the Company's interests. Upon your skill in the examination of subjects for insurance, and the fidelity of your reports, depend in no small degree its success and safety.

While the following remarks are intended to prescribe to a certain extent your duties, they are also designed to be suggestive. For, with all the direct instructions which may be given, a very large margin must of necessity be left for your own judgment, and you must ever exercise that vigilance which it is impossible to define, in order to secure and protect the interests of the Company.

You should always keep in mind the fact that there will be a strong tendency on the part of the unscrupulous to make false statements and to cover up everything which could impair the probability of acceptance. You will, therefore, be very careful to look out for and detect hidden disease, or conditions of the system calculated to shorten life, and observe particularly the effect upon the constitution of any previous disorder.

Examinations should be considered confidential, as between yourself and the party, and no person should, as a general rule, be allowed to be present.

Very often it may be best not to communicate the result of your investigations to the party examined, but in this matter you must be governed by your own judgment.

In making an examination, you will first ascertain the occupation of the party, its effects upon his health, the age, weight, height and general appearance. You will then direct particular attention to the following points:—

1st. The family history, longevity of ancestors, and in regard to whether insanity, apoplexy, scrofula, epilepsy, phthisis, or renal disease has existed in the family.

2d. Any illness during the life of the applicant, particularly spitting of blood, gout, rheumatism, asthma, smallpox, or vaccination, pulmonary complaints, fits, etc.

3d. General habits of applicant's life in reference to the use of intoxicating drinks, opium, etc.

4th. Observe particularly the character of the pulse and respiration. A very careful examination into the condition of the heart and lungs should be made.

Place your hand upon the chest and see if you can detect any inequality in its formation, or in the respiration.

Observe whether the chest be expanded, or narrow and depressed, especially in the subclavian region. Also if the "vesicular murmur" is clear and recognized in all parts of the lungs, and whether abnormal sounds can be detected. Do not allow any covering of the chest to interfere with a thorough and searching investigation into its capacity and the condition of the lungs.

Be very careful to see if there be any tubercular deposits in the lungs. This is one of the most common diseases and in its incipient stage most apt to deceive the Examiner. Examine most critically the apex of the lungs, as it is there, as a general rule, that tubercles are first deposited.

5th. If rheumatism has existed, examine carefully the conditions of the heart with reference to the effect of the disease on that organ.

6th. If the applicant be slender in form, of light weight, pale, or of sallow complexion, be particular to ascertain whether these conditions are recent or if such is the usual state.

7th. If there are indications of disease of the urinary organs, the urine should be tested, and its condition noted. State if it contains either mucus, pus, blood, albumin, casts, cells or sugar; whether alkaline or acid, specific gravity, color, and average amount passed daily. When the application for insurance, including insurance in this Company on the same life already in force, reaches the sum of \$5000 or more, the Medical Examiner will report upon the condition of the urine, on the blank furnished by the Company.

8th. If syphilis has existed, inquire as to its effect upon the system, and whether there has been any secondary effect.

Examine as to whether there has ever been enlargement of the prostate gland, stricture or retention of urine.

9th. Female applicants should be questioned as to number of children born, the character of the labor, and if it has been difficult, the effect upon the constitution.

The result of your investigations on each of the foregoing points you will please state clearly on the certificate, together with any other statements or information that will aid the Company in arriving at a perfect understanding of the case. In some cases it may be advisable for you to state your opinions more fully than is covered by the certificate. Under these circumstances please communicate by letter.

If the examination is not satisfactory in any of the vital points, recommend the non-acceptance of the risk.

Again let us impress upon you the fact of your responsibility, and the dependence of the Company upon your skill and fidelity. Conduct your examinations with great care, and always consult and endeavor to protect the interests of the Company.

PROVIDENT SAVING LIFE ASSURANCE SOCIETY.

INSTRUCTIONS TO THE MEDICAL EXAMINERS.

In the examination of a risk for life insurance, there are just three essential points to be borne in mind, viz.: (a) The family history; (b) The personal history; (c) The present physical condition.

(a) *Family History*.—A first-class family record is of itself a strong recommendation to the applicant, and he should be duly credited therewith. On the other hand, a poor family history detracts from the chances of the risk by exhibiting certain predispositions to disease on the part of the applicant. Whenever requested by the applicant to hold his medical history private, deliver a *sealed* report to the Agent, with request that the same be mailed, unopened, to the Home Office.

Rule I.—Always correct any loose or equivocal statements on the part of the solicitor in answer to “causes of death” of his relatives. Statements such as “old age,” “natural death,” “complication of diseases,” “decline,” “lung fever,” “childbirth,” “exposure,” “don’t know,” etc., should not be accepted. If, through ignorance, no other answer can be offered, the Examiner should always put such questions as may lead to some history regarding the previous health, duration of sickness, nature of death, of the deceased, and then make notes accordingly upon the application.

Rule II.—When both parents have died of phthisis, positively decline the risk. When one parent only has died of phthisis, and the applicant has not yet reached the age of 35, defer the risk; if over 35, and family record and physical condition be good, accept the risk, leaving a final decision to the Home Office.

It has erroneously been stated that the liability to pulmonary consumption diminishes remarkably after the age of 35; while the truth is, “the proportionate mortality from that disease does not vary between the ages of 15 and 70 as much as is generally assumed.” Dr. Sieveking, from whom we have just quoted, further says: “And we would warn the medical officer against yielding to the popular impression that this inquiry becomes unnecessary after full manhood is reached, as the danger of phthisis continues beyond the age of 60; an impression that weighs much with boards of directors, who will admit evidence of a consumptive taint from puberty to 25, which they frequently put aside as insignificant after that period.”

Rule III.—(b) *Personal History*.—Be sure that the person examined is the same whose name is attached to the application. Statistics and “tables of comparison” have been made as standards for life insurance. These tables are appended to the Instructions, and your study of them in every examination is requested.

Rule IV.—In the personal history of the applicant, pay especial attention to the following points, viz.:—

(a) *Occupation*.—Publicans, stonecutters, grinders, bakers, printers, miners,

painters, etc., are, as a rule, undesirable risks, particularly so where the physical status of the applicant is not first-class.

(b) *Personal Habits*.—Question the applicant closely as to past and present indulgences in alcoholic liquors, beers, narcotics, etc., and impress upon him the necessity of giving specific answers to these questions in the application.

(c) *Height and Weight*.—The percentage of variation between height and weight is obtained by dividing the difference between the normal and actual weight by the normal weight (see table). “When an applicant exceeds or falls below the average weight proportionate to his height, by 40 per cent. and 20 per cent. respectively, he transcends a safe limit.”

Excess of waist over chest at full inspiration is abnormal, and should cause the Examiner to consider fatty degeneration, apoplexy, abuse of alcohol, diabetes, overweight, etc., etc.

(d) *Lungs*.—Dr. Sieveking states that of the total mortality from all causes in England and Wales, one-ninth is due to pulmonary consumption. It behooves the Examiner, therefore, to be very thorough in his examination of the lungs.

Rule V.—All measurements and examinations must be made under the vest. A chest capacity of less than $2\frac{1}{2}$ inches should reject.

One of the earliest indications of pulmonary disease is a habitually quick pulse. The pulse in a normal adult man is about 70. Any pulse at or about 85, which at the same time is weak and deficient in volume, must be looked upon with suspicion. In all cases where the rate exceeds 80 to the minute, another trial, when the applicant is off his guard, must be made.

“A weight which is much below the average at or after 30, especially if accompanied by an accelerated pulse and breathing, undoubtedly justifies an increased rate, even if no other signs of a tainted constitution be found. Our experience of the policies that have become claims has forced the conviction upon us, that medical men and insurance offices would do well to regard these points more seriously than is generally done in estimating the expectation of life.”—Sieveking. *A true hæmoptysis invariably rejects.*

(e) *Heart and Great Vessels*.—Dr. Sieveking assigns to this class one-sixth of the total mortality from all causes, “a proportion that is much larger than appears to prevail in insurance offices.” In this country, where there is a great prevalence of rheumatic fever, the proportion may not be regarded as too large, after all.

The simplest and most practicable division of abnormal heart sounds for diagnosis in life insurance, we would arrange as follows, viz.:—

1. We may exclude murmurs connected with the right side of the heart, because they are quite rare.

2. Confining our attention, then, to the left side of the heart, we shall have four possible heart murmurs to keep before the mind and ear.

(a) With the heart's systole, mitral regurgitant, or aortic obstructive murmur, or both together.

(b) With the heart's diastole, aortic regurgitant, or mitral obstructive murmur, or both together.

The seat of these sounds or murmurs will determine the location of the valvular lesions.

Of all these valvular lesions, aortic regurgitant is the most significant. Dr.

Walshe writes: "I have known death take place during the act of walking, of eating, of speaking; while the patient was emotionally excited, and, per contra, at a moment when he was perfectly calm. And a very singular proposition is, that the more pure and uncomplicated the regurgitant, the freer the heart from any other form of disease, the more likely is the individual to be cut off without a moment's warning. There is no direct connection between the amount of danger of disease at an orifice of the heart and the intensity of an existing murmur; the very weakness of a murmur may, indeed, be a fatal sign." A history of recent inflammatory rheumatism will postpone for a year.

An intermittent pulse is not of itself sufficient cause for rejection, as it is sometimes found in the healthy. But an irregular or remittent pulse must ever be taken with suspicion of some grave disorder, either in the heart and great blood vessels, or in the economy at large. It is sufficient alone to justify rejection.

Rule VI.—(c) The Kidneys.—This Society requires the chemical examination of the urine in all cases. The Society does not demand a refinement of tests. For albumin, "Heller's test," or the trickling of nitric acid down the side of the inclined tube containing urine, is at once the most accurate and practicable. If no ring or cloud appear against the acid below and urine above, it will be safe to say "no albumin." When the urine is turbid on being voided, filter before making this test. With an acid urine, boiling will reveal albumin.

The only possible source of error in these two tests is the presence of an excess of urea or urates; but here, in the one case, heat, and in the other, acid, will clear away all clouds of doubt. These two tests, together with the specific gravity, are all that is required by the Society. A specific gravity under 1015 or over 1028 demands repeated tests in order to determine whether it is merely transitory or permanent.

For sugar, "Trommer's test," or freshly-prepared "Fehling's solution," will be sufficient. All urine should be tested for sugar, regardless of the specific gravity.

If a urine at or above 1030 gives no sugar on repeated tests, the Examiner may have reason to suspect an excess of urea, or that condition of the body known as azoturia, and he should look for some vital disturbance in the assimilative organs.

Both albumin and sugar may appear in urine at times, and be indicative only of functional derangement, and not of organic disease.

But this Society recognizes in these manifestations, even when slight, evidence of a departure from the healthy standard, and requires, in the case of albumin, a postponement of three months, and of sugar, a reëxamination within a few days of a specimen of urine passed an hour after a full meal.

A microscopical examination of the urine is only expected when the Examiner may feel suspicious of Bright's disease, not revealed by the chemical tests. An additional fee of two dollars will be allowed for this examination.

As in phthisis, so in Bright's disease, the character of the pulse offers early indications of the disease. Dr. T. A. McBride, of New York, has contributed a very interesting paper on this subject. He believes that a pulse which is full, tense and non-compressible is indicative of high arterial pressure, and if permanent, will sooner or later produce organic changes in the renal tissues.

Medical Fee.—The fee for a medical examination in this Society is three dollars, whether the risk be accepted or rejected, and the Society holds itself responsible for the payment of the same. Accompanying these Instructions you will find suitable blanks for declined or deferred risks, which in all such cases are to be filled out by you, and sent, sealed, direct to the Medical Department. Please accompany this report with your bill, giving the name in full, residence and date of examination.

The payment of your fee will depend upon compliance with this request.

Kindly acknowledge the receipt of this book and oblige the Medical Department.

TABLE OF HEIGHT, WEIGHT AND CHEST EXPANSION.

HEIGHT.		("VITAL CAPACITY") CHEST.	STANDARD WEIGHT.	20 PER CENT. UNDER WEIGHT.	40 PER CENT OVER WEIGHT.
Ft.	In.	Inches.	Pounds.	Pounds.	Pounds.
5	0	33½	115	92	161
5	1	34	120	96	168
5	2	35	125	100	175
5	3	36	130	104	182
5	4	36½	135	108	189
5	5	37	140	112	196
5	6	37½	143	114	200
5	7	38	145	116	203
5	8	38½	148	119½	208
5	9	39	155	124	217
5	10	39½	160	128	224
5	11	40½	165	132	231
6	0	41	170	136	238
6	1	41½	175	140	245

EXPECTATION OF LIFE TABLE.

(According to the American Table of Mortality.)

AGE.	EXPECTATION OF LIFE.	AGE.	EXPECTATION OF LIFE.	AGE.	EXPECTATION OF LIFE.
21	41.53	39	28.90	57	16.05
22	40.85	40	28.18	58	15.39
23	40.17	41	27.45	59	14.74
24	39.49	42	26.72	60	14.09
25	38.81	43	25.99	61	13.47
26	38.11	44	25.27	62	12.86
27	37.43	45	24.54	63	12.26
28	36.73	46	23.80	64	11.68
29	36.03	47	23.08	65	11.10
30	35.33	48	22.36	66	10.54
31	34.62	49	21.63	67	10.00
32	33.92	50	20.91	68	9.48
33	33.21	51	20.20	69	8.98
34	32.50	52	19.49	70	8.48
35	31.78	53	18.79		
36	31.07	54	18.09		
37	30.35	55	17.40		
38	29.62	56	16.72		

UNION CENTRAL LIFE INSURANCE COMPANY.

INSTRUCTIONS TO AGENTS CONCERNING MEDICAL EXAMINERS.

1. Before canvassing any locality for the first time, request the Home Office to send you a list of its Medical Examiners in that locality.
2. If the Company has no Medical Examiner in the place where you expect to do business, request the best regular physician in that place to fill one of our blank applications for appointment as Medical Examiner and forward to us.
3. All Medical Examiners are appointed by the Medical Department at the Home Office.
4. We do not, as a rule, appoint more than two Medical Examiners in one locality.
5. The regularly appointed Medical Examiners must be employed by Agents until otherwise instructed by the Medical Director.
6. We are glad to have our Medical Examiners insure with the Union Central, but do not require them to do so before they can be appointed. If they take policies with us they must pay their premiums to the Company the same as other policy holders do.
7. We do not, under any circumstances, permit an Agent to take a policy on the life of a physician with the understanding that he will be appointed Medical Examiner, and that the examinations required in his neighborhood will be given him.
8. If our regular Medical Examiners do not satisfactorily perform their duties our Agents can inform us, and furnish us a statement of their short-comings, and we will make an investigation, but until otherwise instructed by us, the regular Medical Examiners must be employed.
9. If any of our Examiners remove from the locality they were appointed for, or become incapacitated by disease or age, or if any have contracted habits which will impair their usefulness or standing in the community, report the facts to us at once.
10. We desire our Examiners to be physicians of wide experience, unquestioned ability and undoubted character.

INSTRUCTIONS TO MEDICAL EXAMINERS.

In your examinations for us let your replies be in your own handwriting.

Let it be distinctly understood that our table rates are for insurance on *sound lives*, and that none but strictly such are to be *unqualifiedly* recommended by the Examiner.

Direct your inquiries specially to any family tendency to consumption in any form, in either the direct or collateral branches; to insanity, apoplexy, cancer, scrofula, rheumatism, diseases of the heart, or syphilitic diseases.

Ascertain whether the applicant is *temperate and pure* in his habits of life, and whether *he has always been so*, being careful not to recommend to the

Company any person of intemperate or lewd habits, or any *reformed inebriate*, and state clearly the facts as to his present habits and his antecedents in these respects.

Often, in consequence of an indefinite or ambiguous answer by the Medical Examiner, in the family history or personal examination of an applicant, which a few words might explain, a correspondence is entailed which not only takes up the time of the Officers and Medical Examiner, but necessitates vexatious delays to both applicant and Agent, and frequently ends in the withdrawal of the party applying for insurance. In order to avoid these delays and expedite action, we respectfully request you to carefully and clearly answer *all* questions.

If the health of any living relative is reported as "*feeble*," "*moderate*," or "*poor*," please explain why they are not in robust health, and state whether or not they have cough, consumption, or other constitutional disease.

If the party be much under or over weight put him on the scales and weigh him, as well as measure his height.


If the pulse is above 80, postpone final action until the party can be examined under conditions favorable to quiet and composure. The pulse rate of most persons will be accelerated when first brought into the presence of a physician for examination; also after eating a hearty meal, and immediately after active exercise. If after sufficient time has been given for these influences to subside, the pulse still remains high, the fact must be reported.

If the party be a woman over 40 years of age, always state whether or not she has successfully passed her climacteric period.

If you report the appearance of a party as "*moderately good*," please explain whether you mean that he is up to the average of selected lives or below it.

Be particular in giving the ages and cause of death of grandparents, but if they cannot be ascertained, state, if possible, whether they "*attained old age*," or "*died early in life*."

We respectfully request you to read carefully, and to be guided by the directions, contained in the following paragraph :—

What is your family history, according to the following schedule?  In stating the cause of death, avoid such expressions as "*general debility*," "*change of life*," "*fever*," "*exposure*," or any other indefinite term. If the expression "*childbirth*" is used, be particular to state how long after the delivery of the child, and also whether there were any symptoms of chest trouble, viz.: cough, expectoration, loss of flesh, night-sweats, etc. If the health of any of your living relatives is stated as "*MODERATE*" or "*FAIR*," state in Remarks what ails the person.

We depend on you as a Medical Expert to act in the interest of our Company. With the interest of the Agent or applicant you can have nothing to do. You are employed by the Company. And in expressing an opinion adverse to the life of an applicant, we respect your judgment as highly, and pay you the same fee, as when you express a favorable opinion.

You will readily perceive how important and responsible is the relation which the Examining Physician sustains to a Life Insurance Company; upon the skill and vigilant scrutiny with which *each* individual examination is conducted the interest of the Company must necessarily depend. If each Examiner of a

Company passes *one* unsound life, the aggregate of such members would so diminish the average vitality of the whole as seriously to impair the permanent safety of the institution. We need, therefore, offer no apology for the urgency and minuteness with which we solicit your best efforts in the performance of this most responsible service.

If you are aware of any facts bearing unfavorably upon the risk which you may not care to notice in the report, you can communicate them by letter to this office, and all such communications will be considered strictly confidential. Such communications should be written and mailed immediately after your examination, in order to reach us before action has been taken on the application.

UNION MUTUAL LIFE INSURANCE COMPANY OF MAINE.

TO AGENTS AND MEDICAL EXAMINERS.

1. Examinations are to be made only by the duly appointed Examiners of the Company.

2. When an Agent contemplates soliciting in any new field, he should at once write to the Company for the name of the Medical Examiner to be employed. The Agent should not wait until he has a party to be examined before attending to this, as the proper selection of the Examiner often requires a week or more; and, as this rule is inflexible, too much importance cannot be given to attending to the appointment promptly.

3. No time will be saved by having examinations made by Examiners unknown to the Company, as they will not be accepted, and the fee will have to be paid by the Agent employing them.

4. The usual fee allowed by the Company to be paid for each examination is from \$3 to \$5. The latter is allowed only when urine is examined. Fees of the Medical Examiner will be paid, whether the applicant is accepted or rejected, *provided* the application has been received by the Company.

5. The causes for rejecting applicants will not be disclosed, as they are, in a measure, confidentially communicated.

6. Bills for examinations should be made out monthly, and mailed by the Examiner direct to the Company for payment. Agents are requested to instruct the Examiner to this effect, and furnish him with the bill-heads supplied by the Company, but in no case to pay such bills.

7. All applications upon which an examination has been made must be sent to the Company, whether recommended by the local Medical Examiner or not, as a check upon the correctness of the Examiner's bills when presented.

8. The Company should not be subjected to the expense of a medical examination, when the personal or family history of the applicant would render his rejection probable.

9. Every applicant must be examined by the Examiner appointed *for the place where the applicant resides*; otherwise the Agent will have to pay the medical fee, and the applicant be reexamined.

10. If, however, an application is taken at a considerable distance from the applicant's usual place of residence, an exception to this rule may sometimes be made, but only when clear and satisfactory evidence is furnished to the Company that the applicant could not be examined by the regular Examiner of this Company at the proper place; which evidence should, *in all cases*, be furnished at the time of forwarding the application.

11. If an Agent should unexpectedly enter a new field and secure applications (not having had time to apply for an Examiner there), he may get these risks examined by the physician of one of the *well-known* Old Companies; *but, with the first application so taken*, the Agent must forward to the Company a full

explanation, stating *where* and *when* the Examiner graduated, to whom he refers, and for what Company or Companies he is or has been the Examiner, on forms provided for that purpose. *Only with this explanation* will the new applications be entertained.

12. As all Medical Examiners are selected and appointed through the Home Office, and solely on the ground of professional qualification, Agents are particularly cautioned against soliciting physicians for insurance by holding out the inducement of an appointment as Medical Examiner, or by making any promises to that effect, and it is better to avoid any complication which might result in injury to the Agent's business. (We speak of this, because it was formerly the custom to secure the application of physicians upon such promises; but no Agent of this Company is now at liberty to make any such agreement.)

13. After an appointment has been made in any given town, the Manager of the agency in which the town is located will be notified, and he must inform his solicitors; and, after the Manager is notified, the regulation laid down in No. 1 will be strictly adhered to. A list of the Examiners in every Manager's territory is furnished from the Home Office, and the names on this list should be transferred to a suitable book for reference, and the additional names that may be furnished from time to time, added as the appointments are made. This list and book must be left at the agency office, on the retirement of any Manager.

14. It is greatly to the convenience of the Company to have Medical Examiner's accounts made out on the regular bill-heads prepared for that purpose, and Agents should carry some of these among their other canvassing documents, and furnish one or more to the Examiner at the time of presenting applicants for examination, *with the request that the Doctor forward his bill direct to the Home Office at the close of every month, no matter how small the bill.*

15. The average fee for examination is \$3, with an extra \$2 when urinalysis is required. Beyond this, Agents must not promise anything for *traveling fees* or other extras (indeed, the question of fee is usually settled with the Examiner at the time of his appointment, by the Home Office). Most Examiners will go a reasonable distance to examine applicants who cannot come to them, for the usual fee.

16. We would call special notice to paragraph No. 7. Neglect to forward applications upon which examinations are recorded leads to correspondence and delay in settling medical bills. Therefore, all applications *which have been through the examination*, should be forwarded at once to the Home Office, as without these there is no means of ascertaining the correctness of medical bills.

17. Paragraph 8 should be well kept in mind by Soliciting Agents. It is about useless to present for examination, parties who have had "*blood-spitting*," or recent or repeated attacks of *inflammatory rheumatism*, or whose family records exhibit a decided tendency to *consumption*. A little intelligent questioning of the party *before* "writing him up," will develop the fact of uninsurableness, frequently, and save the Company the expense of examination, and the applicant the mortification of rejection. In cases of reasonable

doubt, it will be well to outline the case in the letter to the Medical Director, and ask for advice whether or not to have the party examined.

There are excellent reasons for insisting on paragraph 9, which, if not quite clear at first, will become so after a little thought.

18. Agents must remember that the Examiners selected by this Company are the *busy, practical* medical gentlemen in the community (because these men are likely to be the best posted), therefore they are not always available for an examination at any moment, and it will be well for the Agent to endeavor to make his plans harmonize with those of the Examiner, as far as possible; and, of course, on the other hand the Examiner ought to try to accommodate the Agent as much as he can. *Any real cause for complaint against an Examiner will always receive attention, but Agents must not expect the Company to change its Examiners, except upon strong necessity clearly shown. The fact that one physician in a community will promise his aid to help the Agent, and will take a policy in the Company, while another does not, will have no weight as reason for a change. If the physician appointed does his work well, and is willing to do his best to make the Agent's work go smoothly, this is all the Company can ask.* We are obliged to be thus explicit, because Agents are constantly asking for changes of Examiners, upon grounds that are trivial and unreasonable.

19. In soliciting, if parties are written up who are *greatly out of proportion* in their *height and weight*, they should be led to expect *short endowments* only; for such subjects do not, as a rule, make profitable risks for life or long-term policies, and, by keeping this in mind, many disappointments will be avoided. On another page will be found a table, giving the *average* weight for the height set opposite. Next to the column of average weight is one giving a twenty per cent. *addition* to the average, and still another column showing what would be the weight with twenty per cent. of the average *deducted*. Now, other things being equal, this variation of twenty per cent. from the average, either way, is generally considered compatible with good health; but, if the departure go *very much* beyond these figures, it is prejudicial to the risk, and such cases would only be granted endowments according to the judgment of the Home Office, and, if *too much* out of proportion, declined altogether.

20. Negroes are practically excluded as risks; but *short endowments* may be written on *exceptionally* good cases. (Very careful inquiry should, however, be made, and the Home Office consulted, before putting the Company to any expense for examination.)

21. POLICIES WILL NOT BE ISSUED *on Proprietors of Hotels, Keepers or Attendants of Restaurants, and Bar and Saloon Keepers, or persons engaged in the manufacture of Liquor, Ale, etc.*

22. An unmarried woman or a *married woman who has never had a child* will not be insured until she is over 48 years of age.

23. The experience of all Life Insurance Companies shows that the classes named above are very hazardous ones upon which to write insurance. Hence the decision of this Company not to entertain them as applicants.

24. It is always best that the Examining Physician and the applicant be left entirely to themselves during an examination.


 To insure prompt issuing of policies, special care should be taken to


TABLE OF HEIGHT, WEIGHT AND MEASURE.

HEIGHT.		25 PER CENT. UNDER WEIGHT	20 PER CENT. UNDER WEIGHT	AMERI- CAN STAND- ARD AVER- AGE WEIGHT	25 PER CENT. OVER WEIGHT	40 PER CENT. OVER WEIGHT	AVER- AGE CHEST MEAS- UREMENT.
Ft.	In.	Pounds.	Pounds.	Pounds.	Pounds.	Pounds.	In.
5	...	86	92	115	144	161	33
5	1	90	96	120	150	168	34
5	2	94	100	125	156	175	35½
5	3	97	104	130	163	182	36
5	4	101	108	135	169	189	36½
5	5	105	112	140	175	196	37
5	6	107	114	143	178	200	37½
5	7	109	116	145	181	203	38
5	8	111	119	148	185	208	38½
5	9	116	124	155	194	217	39
5	10	120	128	160	200	224	39½
5	11	124	132	165	206	231	40½
6	...	127	136	170	212	238	41
6	1	131	140	175	219	245	41½
6	2	135	144	180	225	252	42½

TABLE SHOWING THE EXPECTANCY OF LIFE FOR EACH YEAR,
FROM 15 TO 85, ACCORDING TO THE "ACTUARIES'
COMBINED EXPERIENCE."

AGE.	EXPECT'D YEARS OF LIFE.	AGE.	EXPECT'D YEARS OF LIFE.	AGE.	EXPECT'D YEARS OF LIFE.	AGE.	EXPECT'D YEARS OF LIFE.
15	44.96	33	32.30	51	19.50	69	9.00
16	44.27	34	31.58	52	18.82	70	8.54
17	43.58	35	30.87	53	18.16	71	8.10
18	42.88	36	30.15	54	17.50	72	7.67
19	42.19	37	29.44	55	16.86	73	7.26
20	41.49	38	28.72	56	16.22	74	6.86
21	40.79	39	28.00	57	15.59	75	6.48
22	40.09	40	27.28	58	14.97	76	6.11
23	39.39	41	26.56	59	14.37	77	5.76
24	38.68	42	25.84	60	13.77	78	5.42
25	37.98	43	25.12	61	13.18	79	5.09
26	37.27	44	24.40	62	12.61	80	4.78
27	36.56	45	23.69	63	12.05	81	4.48
28	35.86	46	22.97	64	11.51	82	4.18
29	35.15	47	22.27	65	10.97	83	3.90
30	34.43	48	21.56	66	10.46	84	3.63
31	33.72	49	20.87	67	9.96	85	3.36
32	33.01	50	20.18	68	9.47		

give the *date of birth correctly*, and to make the age at *nearest birthday* correspond therewith. Be particular, also, that answers relative to beneficiaries are plainly written, and non-conflicting one with another. Another important point, too frequently overlooked, is *explicitness* in stating the *exact* kind of business followed by the applicant; for instance, if "merchant" or "clerk," what kind of goods does he handle? If "bookkeeper," what kind of business does his firm engage in? etc.

 *Finally*, let it be some one's special work to take *every* application, when completed, and inspect the answer to *each* question, so that, if errors or omissions are found, they may be corrected *before* the application is sent in to the Home Office. Let this be an inflexible rule: it will save much time and vexation.

INSTRUCTIONS TO OUR MEDICAL EXAMINERS.

GENERAL RELATIONS TO COMPANY.

Having signified your willingness to act as Medical Examiners for the "Union Mutual," you will naturally wish to know what is expected of you in that capacity, and also to be put in possession of any special views of the Company relative to the character of the risks which it seeks.

Honesty, care, good judgment, and the general knowledge possessed by well-qualified practitioners of medicine are all necessary to make good Examiners for life insurance. We will therefore touch only on a few of the points about which it is well for the physicians of *this* Company to be advised, and in addition thereto, insert some practical hints concerning the examination of urine, for the sake of those who may not be altogether familiar with such simple and satisfactory tests.

Those who have had experience as Examiners for Life Companies are already familiar with the usual forms and documents in use, and will have but little to learn concerning our own in particular. For those who are not so familiar, it will be well to procure from the Company's Agent one of the blank applications, and carefully peruse it, so as to get used to it; for it is quite lengthy, and this will save time at examinations.

Examiners for this Company are appointed only through the Medical Director at the Home Office.

When one is appointed his name is regularly entered in the Company's register, and he is considered the sole Examiner in the town for which he is appointed, except where, in cities and large towns, it is found necessary to have more than one Examiner to meet the requirements of the Agency. It is always the wish and purpose of the Company to confine the business of examining in any locality to as few hands as possible, believing this to be best for all concerned.

BUSINESS RELATIONS WITH COMPANY.

Agents are required to supply Examiners with the billheads issued by the Company, and medical gentlemen are particularly requested to use these instead of their own personal headings.

All accounts for medical examinations should be sent direct to the Home Office, at the close of each month, no matter how small the bill, as the Company desires to pay all such bills monthly.

It will be a great *accommodation* to the cashier at the Home Office, if bills are *receipted before forwarding*. This request is made, because of the frequent *delay*, and often *entire neglect*, in returning receipted vouchers, after the Company's checks have been sent out in liquidation of bills. (The above request is very generally complied with; and it will not seem unreasonable, when it is remembered that the vouchers are very necessary for the Auditing Board of the Company, and that *mistakes*, or delays in accounts, are far less likely to occur in an institution where everything is reduced to system than among those fully occupied with professional duties, and who have little taste for clerical work.)

The Company will pay for examinations, whether the parties examined are approved or rejected by the Examiner, the only exception to this being in the cases of those who present themselves for re-examination, the object being to restore a policy that has lapsed. In these cases, the *party examined must pay the fee*; and the physician will notice that the form used for such examination (the party usually bringing it with him) has attached to it a receipt to be signed by the Examiner himself, in which it is acknowledged that the party examined has paid the fee.

RELATIONS TO AGENTS.

Medical Examiners, being appointed by the Home Office, are consequently independent of the Agent; but it is for the interest of all concerned that harmony and concert of action should exist between the Agent who solicits and the physician who examines the risks. The work of the solicitor is difficult, and often discouraging in itself, and it is of prime importance that applicants should be examined promptly when once they are in the mood for insurance, and we trust our Examiners will endeavor to accommodate Agents with prompt examinations.

Examiners are sometimes charged with "throwing cold water" on the Agent's work, by remarks or questions to the party under examination, having a tendency to impair his confidence in the wisdom of the step he is about taking. This is all wrong. A physician who is an unbeliever in Life Insurance should never act as the Examiner of any Company; or at any rate, while acting as the trusted adviser of a Company, he should never say or do anything to dissuade those who have decided to insure. A few words from the Doctor may either destroy or confirm the effect of much hard work on the part of a faithful Agent.

The Company does not *ask* or *expect* its Examiners to put themselves out to introduce Agents in a community; but, whenever physicians *choose* to do this *voluntarily*, their coöperation will be most welcome. *The more good applicants for insurance, the better for both Company and Medical Examiner; and to this extent the Examiner, in helping the Agent, is helping himself, and this is perfectly proper.*

Agents, knowing the value of a physician's influence, will sometimes endeavor to secure his assistance in their soliciting work, by offering him a part of their "commissions" on risks procured through his aid. *This is not right*, as it has a tendency to bias the opinion of the Examiner in favor of the applicant (or Agent, which is the same thing) instead of the Company; therefore, in no case must an Examiner have any pecuniary interest (other than his fees for examination) in the placing of risks in the Company.

THE APPLICANT AND THE EXAMINATION.

It is expected that subjects for medical examination will present themselves at the physician's office, but it will *occasionally* happen that an individual either cannot or will not do this; and, in such exceptional cases, it is customary for the Examiner to visit the individual, and make the examination at the usual fee. If, in any such case, however, the Doctor is called to conduct his examination in a place *decidedly unfitted* for it, he will, of course, decline to do it. For instance, a satisfactory examination cannot be made in a *public* store or office, or in a *noisy machine-room*; while, on the other hand, a farmer might be examined in his *field*, or a mechanic in a *quiet* shop, or a merchant in his *private* office.

Medical Examiners should insist upon being alone with the applicant when examination is made.

In conducting the examination, the main points are: first, to ascertain if the applicant himself is, at the time of examination, in a condition of sound mental and physical health; and, second, to get as positive and clear statements as possible relative to the personal and family history, with a view to discover any latent tendency to hereditary diseases which may exist, and to ascertain if any pernicious habits, either *past* or *present*, have impaired the chances for living out the "Expectation" with which the applicant, at his age, is credited in the table preceding; and *every applicant* for insurance should be subjected to a thorough *personal* examination, no matter how familiar the examining physician may be with him or his family history.

Physicians, in the ordinary examination of patients, have usually in view only the ascertaining of present conditions. Here, however, it is with the *future* as well as the *present* that the Examiner has to interest himself; for it is not enough for his purpose that disease does not *now* exist, but he must seek also for reasonable assurances that it is not likely to *develop* in the future.

If he cannot find such assurance, he must be careful how he recommends such a risk.

Care should be taken to answer all questions correctly and fully, and any diseases from which the applicant has suffered in the past should be noted; and, if serious, their date and duration given.

Especially should this be done with reference to *rheumatism*.

HABITS, past and present, should be carefully inquired into, and clearly explained, so that there shall be *no doubt* as to what is meant. Such answers as "*uses some*," "*takes a drink when he wants it*," "*quite temperate*," or "*fairly temperate*," should not be used. "Temperate" is an entirely relative term, and may mean almost anything (according to the view of the party using it), from *teetotal* down to *daily tippling*. If alcoholics or beer are used, the Examiner should find out and state which, how frequently, and under what circumstances. If habits have been bad in the past, state full particulars. Reformed drinkers, as a rule, are not desirable risks.

When considering the "family record," care should be taken to bring out all the points as distinctly as possible; and, if the applicant answers that he "doesn't know" the disease from which his parents or brothers and sisters have died (or suffered), the Examiner should direct his questions so as to satisfy himself, as far as he can, what the *probabilities* are. This he can do by eliciting

some history of the symptoms attending the sickness and death, the duration of the disease, etc.; and if, *in his opinion, there is reason to suspect phthisis* or other diseases of an hereditary nature, let him so state. Vague expressions, such as "*general debility*," "*change of life*," "*run down*," etc., should not be accepted as answers. Applicants, generally, are well aware how strongly it operates against them to state that members of their families have died of *consumption*, etc.; and they will frequently endeavor to avoid the admission by saying they "*don't know*," hence it requires tact, many times, to get at the truth. If they *really* don't know, some good reason for their ignorance can usually be given.

When answers are made that mother or sisters have died in *childbed*, the Examiner ought not to accept this answer as final until he has made inquiry as to the *previous* health, length of time sick, etc., to satisfy himself whether there was not some other cause operating back of the one alleged; and, if it is found that the deceased was weakly or consumptive, *such fact should be stated*.

In measuring the chest of the applicant, keep the tape line *fairly tight*, so as to get correct inspiration and expiration measure. Never measure *outside* the waistcoat, but apply the tape next the linen or under vest, crossing the lower borders of the scapulæ, and just above the nipples.

EXAMINATION OF URINE.

It is frequently the case now that the Company requires an examination of the applicant's urine. In applications for \$5000 and over, and where applicant is 45 years of age or over, this is invariably the rule. This examination, to be of value, should be both chemical and microscopical, and carefully made.

Doubtless most of our Examiners have settled methods of their own by which to conduct these examinations, and it is not our intention to prescribe any *rules* for the work; but it may not be altogether superfluous to take a hasty glance at the subject, and to mention some easy and simple methods which are, at the same time, accurate and reliable.

Healthy urine should be clear, of a straw or amber color, with an odor characteristic of itself, and the reaction slightly acid, though it may become neutral, or even slightly alkaline, during the period of digestion. If violet litmus paper be used, it will be turned *red* by acid urine, *blue* by alkaline, and remain unaffected by a neutral urine.

The specific gravity should be somewhere between 1.015 and 1.028 or 30: the more concentrated and smaller in quantity, the greater will be the sp. gr., and *vice versa*.

The two most important abnormal substances found in solution in urine are albumin and sugar.

TESTS FOR ALBUMIN.

Albuminous urine is generally of low sp. gr.

In testing for albumin, first see that the test-tube is *perfectly clear* and *bright*; and, second, that the urine to be tested is clear. If it is opalescent or cloudy, it may be made clear by filtering through the ordinary filter paper, obtainable of any druggist.

To Test by Heat.—Fill the tube about three-fourths full of the clear urine, which, if not distinctly acid in its reaction, should be rendered so by adding to it a drop or two of acetic acid (U. S. Phar.), and then, holding the tube by the lower end, boil the upper strata of the fluid over a spirit or other hot flame (spirit is best, as it leaves the glass clear for observation). It should be allowed to boil for several seconds, and, if the least cloud or opacity appears in the urine, it is due to one of two things, either *albumin* or *earthy phosphates*. If it be the latter, it will promptly disappear on the addition of a few drops of nitric acid; if it be *albumin*, it will remain permanently.

The quantity of albumin precipitated will, of course, depend on the quantity held in solution in the urine, and may range anywhere from a faint cloudiness to a dense abundant precipitate. If the albumin be in considerable quantity, it will be easily recognized; but as it is very essential that the smallest presence of albumin should be detected, it will be necessary to inspect the tube closely; and, in the way of a hint how to do this to best advantage, I cannot do better than quote the directions given by Dr. A. H. Buck, of New York. He says (after speaking of boiling): "The tube should then be held at arm's length in front of, and near to, a dark background, over the top of which a light is allowed to enter the room through a comparatively small opening. By moving the tube slowly up and down from the dark region below into the light above, and the reverse, a position will be found in which the slightest cloudiness of the fluid can be detected." To do this "in the daytime, the room can be darkened sufficiently by lowering an opaque window-shade to within a few inches of the sill. A dark coat thrown over the back of a chair which stands immediately beneath the window, will furnish the desired dark background. At night, a shaded kerosene lamp, in front of which a dark-covered book is placed to serve as a background, and also to cut off some of the rays of light, will answer an equally good purpose."

The test by nitric acid may be thus made:—

Into a clean, small test-tube pour from half a drachm to a drachm of colorless nitric acid, and upon this allow a couple of drachms or so of the urine to gently trickle down from a pipette, the tube being held in an inclined position, so that the urine may flow gently along its lowest side. If *albumin* be present, a grayish white line, more or less dense, will form like a diaphragm, dividing the acid and the urine at the point where the latter rests upon the former. As this line, however, does not always form at the moment, it is better to set the tube aside, for a few minutes at least, and then observe it.

Another way of reaching the same result is to put first a quantity of urine into the tube (a quarter to a third full), and then, holding the tube obliquely as before, allow the acid to trickle from the pipette along the side of the tube, so as to run *under* the urine (the acid being the heavier of the two liquids), and accumulate in the bottom of the glass. On allowing it to stand a few minutes, the albumin will appear in the white line or band, as before described, just at the junction of the two fluids. Some practice with the pipette is necessary to prevent the fluid it contains, be it acid or urine, from rushing too violently into the fluid in the tube, and thus mixing one with the other; for the success of the trial depends on keeping them from mixing, and only allowing one to rest on the other. The best way to avoid this is to have the upper end of the pipette

roughened, and to rotate it between the thumb and middle finger, as directed by Tyson in his handbook.

In searching for albumin, apply *both* the heat and nitric acid tests.

SUGAR TEST.

If sugar be present in the urine, we shall generally find a *high* sp. gr., but not invariably so. An easily prepared and yet reliable test for sugar is that recommended by Prof. Haines, of Chicago. It is made as follows:—

Formula.

Pure sulphate of copper	thirty grains.
Pure glycerine	two fluid-drachms.
Pure caustic potash, in stick	one and a-half drachms.
Pure water	six fluid-ounces.

Dissolve the sulphate of copper and glycerine in a portion of the water and the caustic potash in the remainder; mix the two solutions, when a perfectly clear, transparent, dark-blue liquid should result, which may be bottled and set aside for use: As usually made, it generally throws down a slight reddish deposit, upon standing a week or two. This, however, does not affect its value as a test. In using, simply decant the clear liquid from the sediment.

In preparing the above solution, if pure caustic potash in sticks cannot be obtained, we may use instead $3\frac{1}{2}$ fl. ounces of the officinal liquor potassæ, at the same time reducing the quantity of water used to $2\frac{1}{2}$ fl. ounces, the other ingredients remaining as above.

Directions for Use.—Take about one fl. drachm of the test solution, and gently boil it, when no change should take place; now add eight or ten drops of the suspected urine, and again bring to a boil. If *sugar* be present, an abundant yellow or yellowish-red precipitate is thrown down; if no such yellow or yellowish-red precipitate appears, no sugar is present.

N. B.—A white flocculent deposit, often thrown down, *consists of phosphates*, and does not indicate sugar.

The microscopic examination is for the purpose of determining whether the deposit contains casts of the uriniferous tubes, epithelium, crystalline matter, or such small quantities of pus or blood as would not be easily recognized by other tests. Every one who is familiar with medical microscopy understands how to make the search, and we would only suggest that specimens be taken from the top and middle of the “deposit cloud,” as well as from the bottom.

Finally, in every case where the Examiner has a *doubt* of the desirability of the risk, he must give the *Company* the benefit of the doubt.

All physicians accepting the office of Medical Examiner are expected to answer letters from the “Home Office,” free of charge, and promptly.

SPECIAL INSTRUCTIONS.

It appears that considerable unproductive work has been done by our Agents in times past, and much trouble and labor caused at the Home Office from a failure to clearly understand the rules and regulations of the Company.

We send this circular out in hopes that it may be the means of diminishing this disagreeable and unnecessary labor.

The management at the Home Office fully appreciate the difficulties under which Agents labor, and are anxious to give them all the help possible. But it must be borne in mind by all that the safety and success of the Company largely depends upon the character of risks taken.

Great care has been taken, at no little expense, to select a competent board of Medical Examiners, whose faithful and conscientious services are fully appreciated at the Home Office, and there recognized as of the first importance.

Agents must not expect or attempt to select their Medical Examiners.

Whenever an Agent determines to take applications in a place, his first business should be to learn who the Medical Examiner for that place is. If none is appointed, he should notify the Home Office of the fact in time, so that one can be ready for him when needed. It sometimes takes a week or two to arrange this matter.

All applications received at the Home Office, where these rules are not complied with, will be held for explanation.

It is not only discouraging to Agents, but also disagreeable to applicants and Medical Examiners, and expensive to the Company, to have applications rejected. And we feel that with proper care and a thorough knowledge of the rules of the Company, very few rejections need be made.

Agents should not take it for granted that a person is a safe risk, because he looks healthy and says he is well. His own and his family history, his habits and occupation, his relative height and weight, and various other things that have a bearing upon the character of the risk, should be taken into consideration by every Agent before an application is filled out. Honest and straightforward work always pays the best in the end. Care and thought save many missteps.

Our local Medical Examiners are or should be constantly on picket duty, and no Agent has a right to expect them not to notify the Company of approaching danger. Some of course recommend applicants on their *personal* examinations, that the Medical Director feels obliged to reject after considering all the bearings of the case.

It is an easy matter for an Agent to get applications from persons who are not insurable. Such are always willing to try for insurance in any Company; but to write such up and get them examined is only time wasted by the Agent and expense to the Company for nothing.

If every Agent will carefully avoid receiving applications from the following classes of persons, much less rejection will be necessary:—

1st. Persons prohibited by rules of the Company as shown by the "Agents' Manual."

2d. Persons who have been rejected by any Insurance Company within two years.

3d. Persons drawing pension on account of disease.

4th. Persons who have coughed and spit blood.

5th. Persons who have been troubled with palpitation of the heart, or have had gout.

6th. Persons who have had rheumatic fever within a year, or several attacks within ten years.

7th. Persons 15 per cent. under weight, who have lost relatives from consumption; and *all* persons who are 25 per cent. under weight.

8th. Persons under 40 years of age who have lost several near relatives, as both parents, or one parent and one or more brothers or sisters, or several brothers and sisters, from consumption.

9th. Persons 25 per cent. over weight who have lost relatives from apoplexy or heart disease, and *all* persons who are 40 per cent. over weight.

10th. Persons who have or have had any form of cancer or paralysis.

11th. Persons who are deaf and dumb or blind.

12th. Persons who have had hip disease or disease of spine or other well-formed mark of scrofula.

13th. Persons who have had thigh amputated high up so as not to be able to wear an artificial limb easily.

While these cases, as a rule, had better be left alone, now and then an exceptional case may be favorably considered. If, therefore, an Agent meets with what he believes to be a worthy case among them, he should report it to the "Home Office," and await instructions before putting the Company to the expense of a medical examination.

If all Agents will carefully follow out these suggestions, we shall not find, as we do at present, 20 or 25 per cent. more rejections from one Agency than from another.

WASHINGTON LIFE INSURANCE COMPANY.

INSTRUCTIONS TO THE MEDICAL EXAMINERS.

Life Insurance on the mutual plan is a *business* carried on for the mutual benefit of those insured; to make the business successful, or even safe, at the premiums charged, the risks must be *selected* ones. Many persons awake to the importance of Life Insurance only when they begin to *suspect* that their health is failing; a few deliberately attempt to swindle Companies by obtaining insurance on unsound lives, in which they have an interest; others apply in full confidence of their own soundness who are already laboring under disease or tendency to disease likely to result in premature death. The Examining Physician stands between such parties and the Company; to insure the success of the latter, he must be competent, and must do his duty *carefully* and *thoroughly*. His interests are identical with those of the Company. Careful Examiners are soon known and valued; the knowledge of their ability, care and integrity extends from one office to another, and cases otherwise in doubt may occasionally be accepted from confidence in their judgment.

As a further safeguard, the applications are all submitted to the physician at the Home Office. To enable him to form an opinion of the case, *every fact which influences* the judgment of the examining physician should be stated in the application.

The examinations should always be made in private; *no one to be present but the Examiner and the applicant.*

The medical Examiner is required to read over carefully the *applications* of those desiring insurance and see that all the questions are fully and explicitly answered. If any of the answers require explanation, the applicant should be further questioned by the physician, and the facts elicited bearing on the case noted in the application itself.

The question regarding the *occupation* of the applicant is often answered in too general a manner. The applicant is a mechanic, merchant, etc. Some of the mechanical occupations, *e. g.* those of the tailor, the shoemaker, the printer, carried on often in confined rooms and in cramped positions of the body, are unfavorable to longevity, and in doubtful cases may incline the Company to grant only a limited payment policy, or to decline the application altogether; on the other hand, the objection would not apply, if the applicant were engaged only in supervising the manufacture or in the sale of the articles produced. A bookkeeper is a less desirable risk, other things being equal, than one whose occupation compels him to a more active life.

Those whose occupations expose them to the inhalation of dust—stone-cutters, miners, millers, etc.—are more liable to pulmonary complaints, other things being equal, than those who are not specially subject to such causes of irritation.

The general experience of Life Insurance Companies has proved that those engaged in the *sale of intoxicating liquors* are exceptionably bad risks. Dr.

John Dickenson, of London, states: the *average* duration of life of liquor dealers is shortened by three and a half years.

If the applicant has had rheumatism, the character of the attack, whether acute or chronic, the *date of its occurrence*, and whether there has been one or more attacks, should be carefully noted. It is estimated that in acute rheumatism the heart is affected in as large a proportion as one-third of all the cases. The younger the applicant at the time the attack occurs, the greater the liability to heart disease, and when it has occurred in infancy or early childhood, this alone is a valid ground for rejecting the risk. Rheumatism, too, is often an hereditary disease, and if the applicant has had an attack, the family history in this respect should be noted.

If the applicant has had gout, the age at which the attack first occurred, its character, severity and the number of attacks, should be given. As in the case of rheumatism, here also the family record should be searched for evidence of hereditary taint.

When the applicant has been subject to attacks of asthma, the nature of the attacks and the frequency of their occurrence should be inquired into. Sometimes it is only the rose-cold or hay-asthma, as it is termed; sometimes there may be emphysema or heart disease. In all suspicious cases the chest should be exposed, carefully examined, and the results, favorable or unfavorable, given.

If the applicant states he has had disease of the urinary organs, its nature and duration should be given; sometimes it turns out to be a simple lumbago, or attack of muscular rheumatism. If gravel is mentioned, it should be stated whether it was a simple deposit of urates, or whether a small calculus had been passed; if the latter, it should be ascertained whether more than one stone has passed, and if so at what intervals of time, and the date of the occurrences should be noted as nearly as possible in the application.

In the examination of the urine, after ascertaining the amount in twenty-four hours, the specific gravity and the reaction, it should be tested for albumin and sugar. The simplest and most trustworthy tests for albumin are the nitric acid test and the heat test. The nitric acid test is made as follows; Fill a test-tube about one-third full of urine, then, inclining the tube, pour in strong nitric acid in such a manner that it may trickle down along the side of the tube to the bottom and form a stratum a quarter of an inch thick below the urine; or better still, the nitric acid may be introduced below the urine by means of a pipette. If albumin be present, an opalescent zone will be observed at the point of contact of the urine and the nitric acid. If there be only a trace of albumin present, some twenty or thirty minutes may elapse before the zone becomes visible. Should a cloudiness be observed, due to amorphous urates, the application of heat will cause it to disappear, whereas the turbidity from albumin is not affected by heat. The urine of patients who are taking cubebs and copaiba is usually somewhat opalescent, and nitric acid, in the cold, sometimes increases the opalescence. The sense of smell will direct attention to the presence of these drugs, and heat diminishes the opalescence and prevents any turbidity with nitric acid.

The best manner of applying the heat test is to fill a test-tube two-thirds full of urine, add one or two drops of acetic acid and then boil the upper portion of the column of urine. If albumin be present, the upper boiled portion

of the urine will show opalescence, in contrast to the lower half, which remains unchanged. The points of importance in this test are : (a) not to add too much nor too little acid, and (b) to boil only the *upper portion* of the urine. In all tests for albumin the tube should be held in a strong light against a dark background. Of the various tests for sugar, that of Fehling's is preferred, performed as follows : Fill a test-tube to the depth of one inch with Fehling's solution ; heat until it begins to boil, and then add *a drop or two* of the suspected urine. If it be ordinary diabetic urine, the mixture, after an interval of a few seconds, will turn *suddenly* to an intense opaque-yellow color, and in a short time an abundant yellow or red sediment falls to the bottom. If, however, the quantity of sugar present be small, the suspected urine is added more freely, *but not beyond a volume equal to that of the test employed*. In this latter case the mixture should be raised once more to the boiling point. It is then allowed to cool slowly. If no suboxide has been thrown down when it has *become cold*, then the urine may with certainty be pronounced sugar-free. The precautions to be observed in this proceeding are : (1) to boil the test first and not the urine, and (2) to use an excess of the test.

If the applicant has had syphilis, *the date of the initial lesion* should be given, as well as the subsequent history of the case (secondary or tertiary symptoms, nature and duration of treatment, etc.). *The interval which has elapsed since last appearance of symptoms* of the disease should be ascertained and stated.

If the applicant has had stricture, full particulars should be given, including cause (gonorrhœal or traumatic), treatment, date of cure and present state of urethra.

Rupture, if it exists, should always be stated. When easily reducible and retained by a well-fitting truss, it forms no necessary bar to insurance, but the existence of an irreducible hernia renders the subject uninsurable.

The disease from which Life Insurance Companies suffer most is consumption, and all questions bearing upon this subject should be carefully scrutinized. If the patient has suffered from hæmoptysis, its extent, duration, and period of occurrence should be given. Often applicants do not know the disease of which members of their immediate family have died, or return it as general debility, change of life, dropsy, bronchitis, pneumonia, exposure, rupture of blood vessel, effects of accident, old age, etc., and in such cases inquiry should be made, and if it proves that death has occurred after a lingering, wasting disease, attended with cough, the probability is that it occurred from phthisis. Mothers or sisters are often reported as dying of childbirth, while inquiry will elicit the fact that they have died many weeks after childbirth, of wasting disease, which was attributed to that cause. The results of inquiry in all these cases should be carefully and fully noted in the application. This will avoid much delay and *unnecessary* correspondence with the Home Office. In all cases where a *tendency to consumption* is suspected, the present health of the surviving members of the family should be scrutinized with particular care. Where any doubt may exist, the longevity, etc., of the uncles and aunts should be inquired into. Where father and mother have died at an early age from acute disease, or accident, the history of the members of *their* immediate family, the uncles and aunts of the applicant, should be inquired into and stated.

The age of both paternal and maternal grandparents should be given ; if any of them have died prematurely, the disease, if possible, should be ascertained and stated ; when the applicant is ignorant of the age at death, the fact should be stated.

The report of the Medical Examiner should invariably be written and signed by himself. He should weigh and measure the applicant when possible, but if not, he should estimate the weight and height as accurately as he is able ; ascertain, by feeling, the fullness and firmness of the muscles, and state whether the figure is erect or bowed, slender or robust, and whether the complexion is pallid, healthy, or too high colored.

He should learn and state if the applicant has notably lost or gained flesh within the last five years. When there is any hereditary predisposition to consumption, or where the habit of body is particularly slender, the *chest should be exposed*, and great care taken to ascertain if the expansion of the chest be free and equable, if there be any want of symmetry in the two sides, if there be any sinking in under the clavicles, and if auscultation and percussion give normal results.

If the applicant has had rheumatism, or complains of palpitation, the region of the heart should be exposed, the point of the apex beat (normally in the fifth intercostal space, and about one inch within the left nipple) should be noted, and any abnormal murmur attentively listened for. The *pulse should always be felt prior to the examination of the chest*, which is apt to quicken and excite it.

Next to consumption, if not equal to it, the abuse of alcoholic liquors, fermented as well as distilled, causes in our experience the greatest loss to Life Insurance Companies. Where there is the slightest doubt of the applicant's habits, the question should be distinctly put, and the amount of daily consumption, and the facts as to occasional excess should, so far as possible, be ascertained and entered on the application. An observing physician will often learn much from the applicant's complexion and general appearance.

Occasionally some particulars in regard to the history or health of the applicant may be suspected or discovered which the Examiner may not desire to enter upon the application : in such cases a private letter may be written to the Medical Examiner at the Home Office.

APPLICATION FOR INSURANCE IN
THE _____ LIFE INSURANCE COMPANY.

14

<p>1. A. Give your NAME in full and POST-OFFICE ADDRESS.</p> <p>B. PRESENT and PREVIOUS OCCUPATIONS? (State the kind of business.)</p> <p>C. If a MARRIED WOMAN, state your MAIDEN and HUSBAND'S name.</p>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">A.</td> <td style="width: 50%;">A.</td> </tr> <tr> <td>B. Present</td> <td>Previous.....</td> </tr> <tr> <td>C. Maiden name,</td> <td>Husband's name,</td> </tr> </table>	A.	A.	B. Present	Previous.....	C. Maiden name,	Husband's name,
A.	A.						
B. Present	Previous.....						
C. Maiden name,	Husband's name,						
<p>2. A. Give the NAME and post-office address of the party for whose benefit the insurance is proposed.</p> <p>B. State the RELATIONSHIP of the party to you.</p> <p>C. If a MARRIED WOMAN, state also her MAIDEN and HUSBAND'S name.</p>	<table border="0" style="width: 100%;"> <tr> <td style="width: 50%;">A.</td> <td style="width: 50%;">A.</td> </tr> <tr> <td>B.</td> <td>B.</td> </tr> <tr> <td>C. Maiden name,</td> <td>Husband's name,</td> </tr> </table>	A.	A.	B.	B.	C. Maiden name,	Husband's name,
A.	A.						
B.	B.						
C. Maiden name,	Husband's name,						
<p>3. Give the PLACE and DATE of your BIRTH.</p>	<p>Born at.....County of.....State of.....</p> <p>on the.....day of.....18 . AGE nearest birthday,</p>						
<p>4. Are you MARRIED, SINGLE, WIDOWER or WIDOW?</p>	<p>.....</p>						
<p>5. Have you your life insured in this or any other company? (If so, give the name of each company, and the kind and amount of each policy.)</p>	<p>.....</p>						
<p>6. Have you ever applied to any company or agent for insurance, without receiving a policy of the exact kind and amount applied for? or are there any negotiations for insurance now pending? (If so, state full particulars)</p>	<p>No, except.....</p>						
<p>7. SUM to be insured, \$.....</p> <p>How is the PREMIUM to be paid?</p>	<p>KIND of policy,</p> <p>.....</p> <p>HOW IS THE SURPLUS TO BE USED?</p> <p>.....</p>						
<p>(Warrantee and agreement here, as per Company's individual regulations.)</p>							
<p>IN WITNESS WHEREOF, the applicant has hereunto subscribed his name. Dated at.....the.....day of.....18.....</p>							
<p>WITNESS PRESENT:</p>							
<p>(SIGNED).....</p> <p>AGENT'S SIGNATURE: }</p>	<p>Signature of the party proposed for insurance. (SIGNED).....</p> <p>Sign the Names in full. (SIGNED).....</p>						

(REPORT OF THE EXAMINING PHYSICIAN.)
THE ———— LIFE INSURANCE COMPANY OF AMERICA.

Questions to be answered by the person to be insured.

Name of Applicant.....		Age.....		Examined this..... day of..... 18.....		
Residence.....		County of.....		State of.....		
<p>i. A. State, as far as you know, the following particulars in regard to your grandparents, parents, brothers and sisters:—</p>						
<p>Father's Father.....</p> <p>Father's Mother.....</p> <p>Mother's Father.....</p> <p>Mother's Mother.....</p> <p>Father.....</p> <p>Mother.....</p>		<p>STATE OF HEALTH.</p>	<p>AGE AT DEATH.</p>	<p>CAUSE OF DEATH.</p>	<p>HOW LONG SICK.</p>	<p>PREVIOUS HEALTH.</p>
<p>TOTAL.</p>		<p>LIVING.</p>	<p>AGES.</p>	<p>PRESENT AND PAST HEALTH.</p>	<p>DEAD.</p>	<p>OF WHAT DISEASE DID THEY DIE?</p>
<p>B. How many full brothers have you had?.....</p> <p> " half ".....</p> <p>C. How many full sisters?.....</p> <p> " half ".....</p>		<p>2. A. Are you now in good health? B. Have you been successfully vaccinated? A..... B.....</p> <p>3. A. How long since were you attended by a physician or professionally consulted one? C.....</p> <p> B. For what disease? D.....</p> <p> C. Give the name and residence of such physician. E. No, except..... B.....</p> <p> D. Give the name and residence of your medical adviser. F. No, except..... C.....</p> <p> E. Has any physician given an unfavorable opinion of your physical condition with reference to life insurance? A..... B.....</p> <p> F. Have you ever been advised by a physician to try a change of climate to benefit your health? A..... B.....</p> <p>4. A. Have you HERNIA, or have you ever been RUPTURED? B. If so, do you now wear a suitable truss? C. Do you agree to wear one while insured in this Company? D.....</p> <p>5. A. To what extent do you now use INTOXICATING LIQUORS? E. No, except..... B..... C.....</p> <p> B. Have you always been temperate in their use? (If not, explain the duration and extent of excess, and when last.) A.....</p> <p>6. A. Have you ever used OPIUM, MORPHIA, CHLORAL or any NARCOTIC, unless regularly prescribed by a physician? (If so, explain fully.) A.....</p> <p>7. A. Have you had INSANITY, APOPLEXY, PALSY, VERTIGO, CONVULSIONS, SUNSTROKE, CONGESTION, INFLAMMATION, or any disease of THE BRAIN OR NERVOUS SYSTEM? A. None except.....</p> <p> B. Have you had ASTHMA, CONSUMPTION, SPITTING OF BLOOD, HABITUAL COUGH and EXPECTORATION, PALPITATION, or any disease of THE THROAT, HEART or LUNGS? B. None except.....</p> <p> C. Have you ever had CANCER of any TUMOR, CHRONIC DIARRHŒA, DISCHARGE from the EAR, DROPSY, FISTULA, GALL-STONES or GRAVEL, OPEN SORES, INFLAMMATORY RHEUMATISM, GOUT, SYPHILIS or STRICTURE, or any disease of THE LIVER, KIDNEYS or BLADDER? C. None except.....</p> <p>8. Have you ANY DEFECT in HEARING or EYESIGHT, any MALFORMATION or VARICOSE VEINS? D. None except.....</p>				

8. Have you had any illness or disease other than as stated by you above?
(If so, state full particulars.)

None except.....

It is Hereby Agreed: That all the foregoing statements and answers, made to the Company's Medical Examiner, are warranted to be true, and are offered to the Company as a consideration of the contract (as per warranty).

Witnessed by the Examiner.....

Signature of the person to be insured.....

Questions to be answered by the Medical Examiner.

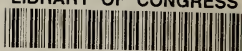
1. A. How long have you personally known the applicant?..... B. Does the applicant's appearance indicate good health?.....
2. A. Applicant's height.....ft.....in. Weight.....lbs.
B. Circumference of chest on full inspiration } under {in.
C. " " forced expiration } vest. {in.
3. A. Race..... B. Complexion..... C. Shape of chest..... D. General figure.....
4. **EXAMINATION OF HEART.**
A. Is the heart's action CLEAR, REGULAR, and NORMAL in its force?.....
B. Is there any MURMUR with either sound?..... C. Any ENLARGEMENT of heart?
D. Is there any ATHEROMA of the radial arteries?
E. What is the CHARACTER of the PULSE as to fullness, compressibility and strength?
F. Is it REGULAR?..... G. What is the PULSE RATE?
A. B. C.
D. E. F. G.
5. **EXAMINATION OF LUNGS.**
A. Is the RESPIRATION FULL and UNIFORM throughout each lung?
B. Is there FREEDOM from UNUSUAL SOUND throughout each lung?
C. Is the PERCUSSION NORMAL throughout each lung?
D. Is there any DISEASE of the THROAT, or any COUGH?
E. Rate of respiration.
A. B. C.
D. E.
6. **EXAMINATION OF THE BRAIN, DIGESTIVE ORGANS, Etc.**
A. Has the applicant any DISEASE or disorder of the BRAIN or NERVOUS SYSTEM?.....
B. Has the applicant ever had SYPHILIS or STRICTURE?.....
C. Is there ANY ERUPTION on the body?.....
D. Is there any DISCHARGE from the EAR?.....
E. Is there any evidence of disease of the stomach, bowels, or liver?.....
F. If ruptured, does he wear a suitable truss?.....
G. Has he had any disease or disorder which affects his present health?.....
A. B. C.
D. E. F. G.
7. **EXAMINATION OF KIDNEYS.** *I hereby certify that the following is the result of a careful examination made by me of the applicant's urine—*
A. SPECIFIC GRAVITY..... B. ALBUMEN..... C. SUGAR..... D. Was the URINE PASSED in your presence?..... Is the URINE SCANTY or OVER-ABUNDANT?.....
8. **EXAMINATION OF WOMAN.** A. Has she passed the change of life?..... B. Is her functional health regular?..... C. How long has she been married?..... D. How many children?..... E. Is she pregnant?..... F. Do you suspect womb disease?.....
G. Has she ever been treated for such?..... If so, by whom?..... H. Any disease of the breast?..... Is she nursing her child?.....
I. Husband's occupation?..... K. Are her moral surroundings correct?.....
9. A. Have you any personal knowledge of the habits, general character and standing of the applicant?..... B. Have you any reason to doubt the truthfulness of the replies?.....
10. **DECISION.** Do you advise the acceptance of the risk by the Company?
("Yes" or "No.")
A. B.

Date..... Signature of Examiner, M.D.....

11. Has any near relative (including uncles and aunts) been affected with Phthisis, Cancer, Apoplexy or Kidney Disease? (If so, explain fully.)



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